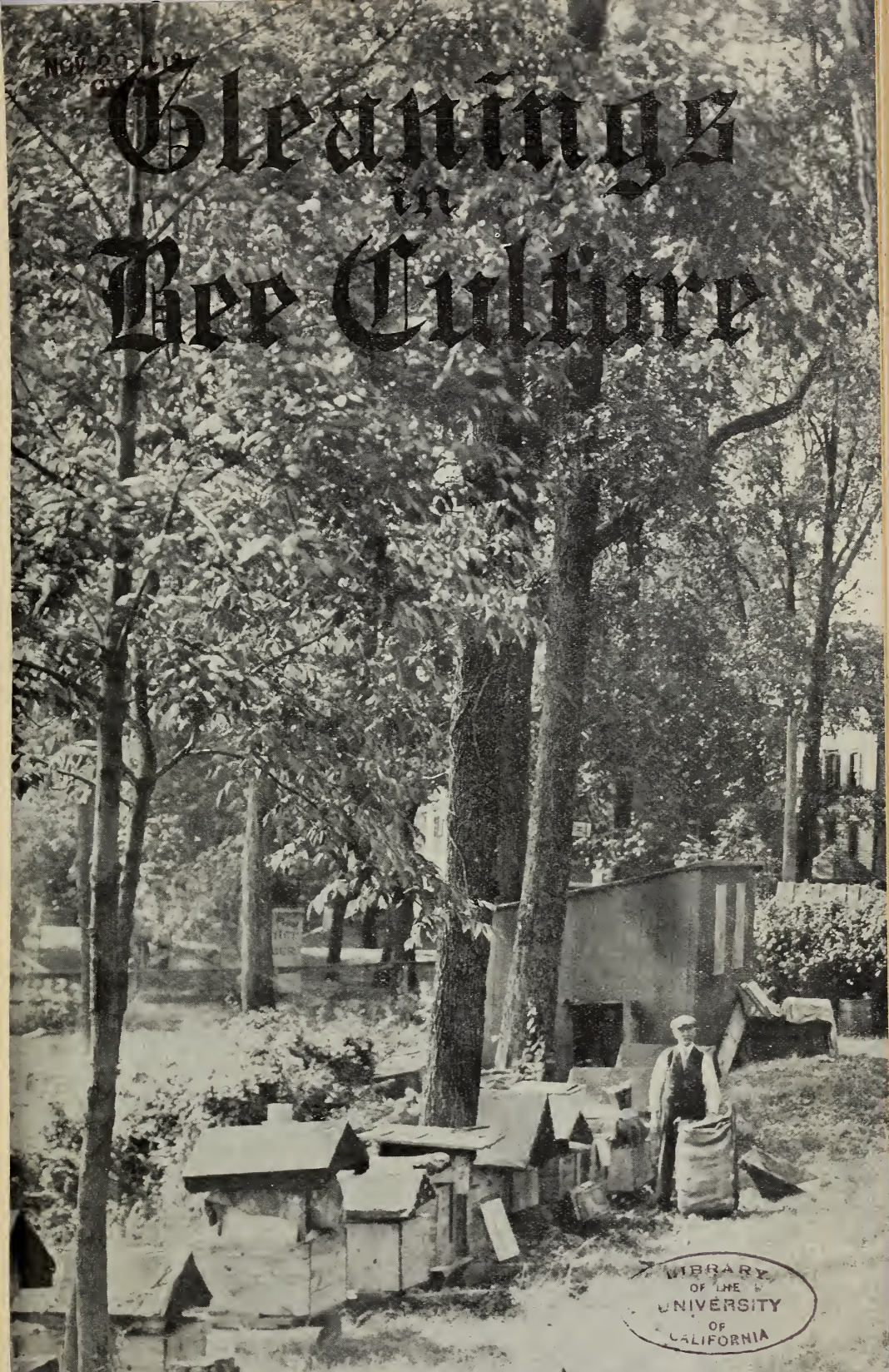
Gleanings in Bee Culture



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Gleanings in Bee Culture

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VOL. XL NOVEMBER 15, 1912 NO. 22

Editorial

WHAT WILL THE WINTER BE?

Last winter was, perhaps, the most severe one that has been known in a period of twenty years. According to the general law of average we can hardly expect another winter as hard on bees. Indeed, it would not be at all surprising if we should have an open winter! for a very cold winter is apt to be followed by a mild one.

NEW STATE ORGANIZATION FOR MASSACHUSETTS.

The attention of our readers is called to the effort that has been started in Massachusetts toward perfecting a State organization, details of which are given on another page. We understand that this is the forerunner of an organized effort among beekeepers of the State to form a strong organization, and wide interest is being taken in it.

BRITISH SOUTH AFRICA PROHIBITS IMPORTATION OF HONEY.

It has been reported (*Rural New-Yorker* for September 21) that the importation of honey and second-hand bee-supplies is absolutely prohibited in British South Africa. The order against beeswax and foundation, however, has been annulled, following a permit from the Department of Entomology. We presume that bees on combs would be prohibited also.

HORSE STUNG TO DEATH.

As a rule, when newspapers get hold of a case where some person or animal is stung they exaggerate it so much in the effort to make a "good story" that little resemblance to the real incident is left. However, in the New Holland *Clarion,* a weekly paper, a writeup appeared of a horse left hitched close to some hives that was stung so badly that it died. While we question whether "the animal's head was literally covered with bees, filling his nostrils and hanging from his nose in bunches and ropes as they do from the hive on a warm spring day," the incident as a whole appears very reasonable, and serves as a warning to those who may be so careless as to hitch horses right in the line of flight of bees to and from the hive. As this occurred after the honey-flow, undoubtedly, it is no wonder that the horse by stamping or switching its tail irritated the bees, so that they made trouble at once. The horse was so badly stung about the nose and face that it died later.

MORE ABOUT THE HARMLESS BEES.

In our Oct. 15th issue we mentioned editorially the so-called stingless bees, newspaper comments concerning which have been "boiler-plated" over the country. Editor Digges, in the November issue of the *Beekeepers' Gazette,* throws more light on the question. The exploiter of these bees, a Mr. Burrows, of Loughton, England, has but nine colonies, and it is quite evident that he has merely stumbled on to a strain of bees that happen to be "so gentle that a child can handle them with perfect safety"! Mr. Burrows probably does not know that the same might be said of almost any gentle colony of Italians or Carniolans.

$10,000 WORTH OF HONEY RULED OUT BY CHIEF FOOD-INSPECTOR IN CINCINNATI.

The food-inspection division of the health department had many condemnations last week, according to the report of Chief Food Inspector R. B. Blume. The honey alone condemned is valued in the report at $10,000. The report states that this, as well as the other things condemned, were unfit for human food. Besides the honey, here are some of the big items of the report: 5801 dozen of eggs; 1442 pounds of poultry; 876 pounds of meat; 442 bushels of potatoes; 57 bushels of tomatoes; 23 tons of cabbage; 33 crates of cantaloupes; 238 barrels of apples; 37 bunches of bananas; 18 dozen cans of canned goods, and last, but not least, 24,750 pounds of peanuts.

The above clipping from the Cincinnati *Times-Star,* sent us by one of our subscribers, Mr. Albin Platz, of Cincinnati, caused us to write to Chief Inspector Blume for particulars. His reply, which follows, explains itself:

The condemnation of this honey was not due to an adulteration or violation of the food laws; but, owing to a fire in one of our local storage houses, the honey became damaged by being saturated with

a chemical. It was not thought advisable to use this honey as a food product under the circumstances. It was condemned, therefore, as unfit for human food.

R. B. Blume, Chief Food Inspector.
Cincinnati, O., Oct. 25.

Of late there have been so few attempts at adulterating honey that the consumer in most parts of the country, at least, can buy extracted honey feeling assured that it has not been adulterated.

THE GREAT ABUNDANCE OF CLOVER.

The reports from all over the country indicate that white and alsike clover are very abundant everywhere. The frequent and copious rains during the past summer —rains that have been continued clear up into the fall—have contributed to an unusually heavy growth of the clovers. In the 27 years in which we have been connected with this journal, we have never known the time when so much clover was reported. Certainly in our own locality there has never been any thing like it. In talking with some prominent beekeepers they expressed the belief that a severe drouth, or a killing one, could not possibly prevent a crop of clover honey next season all together.

DEATH OF JOHN G. COREY.

When A. I. Root dictated the editorial that appeared in the November 1st issue concerning the death of Mr. Harbison, he did not know that another old veteran, Mr. John G. Corey, died on the same day. It is a remarkable coincidence that these two men who had so much to do with starting the beekeeping industry in California should die on the same day.

A picture of Mr. Corey appears on page 520, Aug. 15, and an extended reference to his life was given in the same issue, page 527. It is no little gratification to us that we were able to let this old veteran of our craft see the sketch of his life just before he died. As it turned out it was an obituary of a long life well spent. It is not often that ante-mortem obituaries are given. In this case the subject had the pleasure of seeing that his life had not been spent in vain. He gave his invention to the world. There are not many like him.

In the last two years, the grim reaper has cut down a very large number of beekeepers who were of prominence in the apicultural world twenty-five years ago or more. It is entirely fitting that we who claim to be among the progressive beekeepers of to-day should not forget the work done by these, our teachers, so many of whom have gone to their reward.

SPECIFIC GRAVITY OF HONEY.

A short time ago Dr. C. C. Miller wrote asking why we did not have an article in the A B C and X Y Z of Bee Culture on the subject of the specific gravity of honey. He found under "Honey," for example, where a United States chemist says that the moisture content of a normal honey is 17.70 per cent. "But," said he, "I have not the means of measuring my honey to know whether it is 17 per cent or something else. If you will tell me how much my honey should weigh, *i. e.*, how many pounds per gallon, I could determine very quickly whether my honey is normal or not."

We went to our honey department where honey is being put up by the gallon in gallon cans, and investigation showed that the average extracted runs aproximately 12 lbs. to the gallon. While the average gallon can will hold 12 lbs. of *cold* honey, it will hold only 11 lbs. 10 ounces of honey heated up to, say, 135 to prevent granulation. In other words, a gallon can will fall short by about 6 ounces of holding 12 lbs. of honey when it is filled. This shows that specific gravity varies according to temperature; and it is surprising that there should be so great a difference as nearly a third of a pound to the gallon of shrinkage when the honey gets cold, or, we will say, at normal temperature. Many times we suspect that honey, when it is first extracted from the combs during the height of the honey-flow, will not run much above 11½ lbs to the gallon. A part of this light weight may be due to the fact that honey at a temperature of nearly 100 degrees—that is, blood heat, the temperature of the cluster—is 30 degrees warmer than the atmosphere. Often it may be extracted when the mercury shows 90 or 95 in the shade. This alone will make the weight, even if it comes from sealed combs, some three or four ounces short of 12 lbs. to the gallon. But a good deal is extracted during the height of the season when from a third to one-half of the combs uncapped. This means that some of the honey is not thoroughly ripened. For that reason our large producers have found it necessary to store their honey in open cans, either in large vats covered with mosquito-netting or in square cans with the cap removed. In either case, if the honey is stored in a warm dry room, the specific gravity will increase from 11½ to 12 lbs. to the gallon.

In any case, it has been proven beyond any doubt that no extracted honey should be marketed unless it runs pretty close to 12 lbs. to the gallon when cold. Honey that

is of only 11 or 11½ lbs., is liable to sour. In some cases the heavier portions settle to the bottom of the can while the lighter rises to the top. Many a beginner has found to his sorrow that his honey stored in cans was thin, watery on top, and of poor flavor, while that drawn off from the bottom was of fair quality. But the worst of it is, the honey on top begins to sour, and very shortly the process of fermentation affects the whole can of honey. This fermentation may be arrested by taking it in time by heating; but the more the honey is heated, the more it affects the flavor it had.

We do not know what the moisture content of a 12-lb. honey would be; but as a 12 lb. is a normal honey, and as the Bureau of Chemistry finds 17.70 per cent is the amount of moisture in an average honey, the presumption is that 17.70 is the moisture content of a 12-lb. honey.

THE DIFFERENCE IN FLAVOR BETWEEN COMB AND EXTRACTED HONEY.

PERHAPS the average person would say that honey is honey, whether in the comb or out of it. We presume most extracted-honey producers would assert that *their* extracted, in point of flavor, is the equal of the same article before it was taken from the comb. We shall have to admit that a honey that has been thoroughly ripened has the same delicate flavor whether it is in the comb or out of it. If we could deliver the liquid product direct to the mouth of the consumer, before it granulates and is reliquefied, there never would be any question as to the difference between the comb and extracted honey from the same source and from the same colony, provided both had been capped over before their removal from the original container. But nearly all honeys granulate, and granulated honey has a slightly different flavor from the same honey before it goes into the solid state. We believe that most connoisseurs will agree to this. But when the granulated honey is liquefied it may or may not suffer loss of flavor, as a great deal depends on *how* it is done. In the great majority of cases, honey that has been heated will be found to have lost some of its original aroma. This difference, though not perceptible to the averge consumer, can be detected by the connoisseur. We are informed that the flavors in honey depend on certain alcohols that reside in very minute quantities in the honey. If this is the case, these flavors would be very easily driven off by too high a temperature or by long-continued heat. Quick heating and cooling, if the temperature does not go above 150 or 160, as a rule will not affect the flavor. But a temperature of 140 or more, especially if continued for 24 hours, will rob the honey of some of its delicate aroma, and a connoisseur will notice a slight caramel or burnt taste—something that the ordinary consumer perhaps would not detect. Then why should we speak of it? For the simple reason that beekeepers should be warned that, in heating their honey, they should be careful not to overdo the job. We are convinced that there is a science in liquefying honey; and while we think we know a great deal about it we have yet something to learn. One of the things we *think* we know is that honey should not be kept hot very long. It should be heated quickly, and cooled as soon as possible. Ordinary air cooling we find is the equal of cold-water cooling, although we believe there are some who will dispute this. Well, it comes to pass that a great deal of the liquid honey on the market has been improperly liquefied; and therefore will have lost some of its flavor. It follows then that the *average* comb honey will have more and better flavor than the *average* liquid honey.

There are thousands and thousands of consumers who prefer comb honey, and are willing to pay a double price for it. While a part of this preference may be due to education in early childhood, or to education on the farm, where no liquid honey was produced, there is no doubt that there is a real basis for this preference—in some cases at least.

Again, there are some honeys that suffer more from heating than others; there are some honeys that will remain liquid for a considerable length of time without heating. Mountain sage and tupelo are examples. There are other honeys that granulate very quickly, of which alfalfa, basswood, and buckwheat are marked examples. As a rule the consumer can not obtain extracted alfalfa unless it has gone through the process of granulation and heating to bring it back to its original state. The process in the hands of some will deprive it of some of its original flavor. In the hands of others there will be no appreciable loss, mainly because they know how, and that "know how," we believe, consists in quick heating, and cooling as soon as possible thereafter.

Aside from the inherent flavor already residing in the honey, it is proper to observe that beeswax itself has a flavor all its own. This flavor, added to the natural aroma of honey itself, makes a combination that is prized by some of our best connoisseurs.

Stray Straws

Dr. C. C. Miller, Marengo, Ill.

About that queenless-pollen business I think it's this way: If a colony is bringing in pollen it's a sign it has not been queenless long; but when a colony becomes queenless it keeps right on gathering pollen till it has an overstock, and then it stops. I never knew a colony long queenless without having pollen-clogged combs.

Mrs. L. C. Axtell, p. 706, carbon bisulphide, recommended by the editor, is the thing for wax-worms, large and small, as well as eggs; but if it's more convenient for you to use sulphur don't take the time to pick out the big fellows the sulphur doesn't kill, but put gasoline in a little oil-can and squirt it on them.

R. A. Wall uses scraps of galvanized iron or tin for figures on his hives. A right-angled triangle serves for four different figures by having the right angle in four different positions. Squares and parallelograms with their different positions serve for the rest. Certainly cheap, and familiarity may make them look like figures.

Harry G. Brant, you may not have smelled dead bees in the cellar with only two colonies, but you surely would with 25 or 100 if you confine them with your wire-cloth frame. At any rate, the bees can smell them, and it would be much better for their health and the health of the family living over the cellar to have the corpses fall on the cellar-floor to be swept up than to have them decaying on the floor-board.

Arthur C. Miller is a trouble-maker, always unsettling something that has been considered settled. Now he says in *A. B. J.*, 305, "The mere adding of eggs and larvæ to a colony with a virgin will almost invariably cause her disappearance." That in face of the fact that for years it has been considered the proper thing to give young brood to a nucleus with a virgin to make her lay sooner. Say, Arthur, I find record of nine cases this year in which I gave larvæ to nuclei with virgins, and in each case the virgins became laying queens. What's that? "Were there no other cases which failed?" Why—er—well, yes; since you insist upon it, there were eight other cases in which the virgins disappeared. But then, virgins have also disappeared when no larvæ were given, so the whole thing is left unsettled. Somebody please settle it. [We referred this question to our Mr. Mell Pritchard, who has raised over ten thousand queens. He says he has never been able to discover that the giving of eggs and larvæ had any thing to do with hastening the demise of a virgin queen. Indeed, he makes it a practice to give colonies with virgins young brood. Mr. Pritchard is a keen observer; and when it comes to matters relating to queen-rearing we consider him pretty near authority; and yet on the other hand, we acknowledge that Mr. A. C. Miller on general propositions is reasonably correct. Had we not thought so we would not have engaged him in the revision of the new edition of the A B C and X Y Z of Bee Culture.—Ed.]

Samuel Simmins strongly asserted that we were losing by using the L. frame instead of his 16 x 10. Then it was shown that the L. frame is really the larger. But Mr. Simmins very properly points out, *Canadian B. J.*, 263, that not the outside, but the inside measurements must be taken, and by that the 16x10 is the larger. He also claims the advantage that his frames are spaced ¼ inch wider in winter. But couldn't L. frames have the same advantage? and haven't they had it? One of his claims, however, deserves consideration: The greater depth, and so the more stores *above* the brood-nest. He seems more sure than ever that Editor Root is off in thinking that the size or shape of frame has nothing to do with winter losses, and thinks we should open our eyes to the need of a deeper frame. However that may be, friend Simmins, I happen to know of one apiary where last winter's losses were exceptionally heavy, and the frames were deeper than yours. [As we have before said, if Mr. Simmins were more familiar with our diversified climatic conditions he would probably conclude that the size and shape of the frame is not so material as he seems to believe. The climate of Great Britain is very much milder than that in most localities in our northern States; and the conditions in a mild climate, or one comparatively so, should not be used as a basis for an opinion for other localities where conditions are very different. For Mr. Simmins' benefit we may state that, during the past severe winter (the most severe, probably, that beekeepers here have ever known), the losses were just as severe on one class of frames as any other. For years we followed this proposition, and we, like all others in the United States, have come to the conclusion that the size and shape of a frame do not have very much to do with success or failure in wintering.—Ed.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

That field of buckwheat on the cover page for August 15 looks refeshing to us who never calculate on getting any thing from the crop.

* * *

Nothing in the number for Aug. 15 set my blood circulating so fast as the temperance columns on the last two pages. When will our great political parties progress far enough to dare this hydra-headed monster and smite it to death?

* * *

The weather here in the East was, during August, the coolest for nearly thirty years. It has also been quite wet, making it ideal weather for clover, and we shall go into winter with more clover on the ground than for many years.

* * *

After inspecting for two years I am not surprised at the great variety of opinions in regard to foul brood, for there appears to be a great difference in the virulence of the disease in different localities, and even in the same locality in different yards. Sometimes even in the same yard one colony seems much better able to cope with the disease than another.

* * *

Somehow bees have seemed to be crosser this year than usual. In some instances, while trying to inspect bees I have been actually driven out of the yard. I have found the bees that have been handled most are the gentlest as a rule, and those handled least are the worst. In one case I was driven ten or twelve rods from the bees of a single hive, and still they came at me until I sneaked through a cornfield into an old ice-house where I got rid of them. I never saw the like of them.

* * *

On page 525, Aug. 15, in footnote to N. F. Gardner, the editor of GLEANINGS quotes Cheshire as authority for bees removing cocoons from cells of old combs when they become too small. Now, I will not say they never do this, but I have never seen combs where it looked as if they had; but I have seen many combs where the cells were lengthened to give more room for rearing larvæ.

* * *

Mr. P. C. Chadwick, of Redlands, Cal., is trying to solve the problem of how to reach those who don't take a bee journal. I will tell you, Mr. Chadwick. Our foulbrood laws are reaching them pretty fast, and a good many of them will go out of business pretty soon if they don't wake up. And yet they say in actions, if not in words, "A little more sleep, a little more slumber, a little more folding of the hands to sleep." Their business as beekeepers is almost sure to pass to others who will care for their bees and learn how to contend with foul brood.

* * *

When Mr. Lundgren was in this country last spring, from Sweden, I met him in the State of New York and also in Washington. I told him how both the farmers and beekeepers were greatly indebted to Sweden for a very valuable plant, alsike clover. He did not at first know what I meant, as I had pronounced the name so outlandishly. Then he told me politely how it should be pronounced—all-*si*-kee—in three syllables, accent on the second. It is doubtless too late to change the pronunciation now in use, but it was a satisfaction to me to know how it is used in its home land.

* * *

On page 331 Mr. Doolittle tells how to foretell swarming by examination of the queen-cells of the hive, but adds that "for the apiarist with from 100 to 500 colonies this task is seldom undertaken." Hold, my good friend; that is just what some of us Green Mountain boys do. It is mighty convenient, where you can visit a yard only once in eight or nine days, to open in and know for sure just what is going on; and if preparing to swarm, check it in some way. Where the bees are used for extracting honey it is not so necessary. In large yards bees do not seem to follow swarming rules very closely. I suppose this is because they get a great deal mixed.

* * *

Mention is made on page 417, July 1, of bees being a nuisance during strawberry time as well as during raspberry and blackberry harvests. I do not believe that bees often do harm to strawberry-pickers or the berries; but as I have raised a good many raspberries I know they will not only work on them but store the juice in their hives for honey; and yet they do little harm to raspberries except to those overripe. But we should remember the value of bees in the growing of raspberries in fertilizing the blossoms. Imperfectly fertilized raspberries are a ragged-looking lot of fruit, and the bees do far more good to the raspberry-grower than harm. [See statement by Wililam Belshaw, p. 740.—ED.]

Beekeeping in the Southwest

Louis Scholl, New Braunfels, Texas.

THE TEXAS BEE BULLETIN.

The editor has already called the reader's attention to the bulletin written by myself, "Texas Beekeeping," published by the Texas Department of Agriculture, Austin, Texas. In behalf of our Agricultural Commissioner, Hon. E. R. Kone, I may say that, since he is much interested in furthering beekeeping, all who desire to know more about this industry in Texas may apply to him for a copy of this bulletin, and it will be sent free of charge. It is somewhat larger than the usual bulletins published, and is really more like a textbook on beekeeping in Texas.

* * *

WEARING WHITE OR BLACK HATS.

This is a subject that has been worn almost to a frazzle, for bee journals frequently relate some experience in which bees have been attracted to black objects, such as stockings, hats, chickens, or dogs. We supposed that, because of the dislike of bees for anything black, the wearing of lighter-colored apparel when working in the apiaries should always be advocated. However, at the last annual convention of the Texas beekeepers we found a beekeeper who actually prefers wearing a black hat at all times when working with the bees, and that for a very good reason. If he wears a light-colored hat, the bees, since he wears no veil, have a tendency to strike directly for his dark eyes. To avert this he wears a black hat, and this in such a fashion that the brim in front is pulled down to a level with his eyes. When a bee makes a dart for his eyes he lowers his head slightly, which brings down the brim of his black hat, and the bee, instead of alighting in his face, hits the hat-brim. This being black in color, and fuzzy, as felt usually is, the bee puts all its vengeance into the hat-brim.

It was also alleged, during the discussion of this question, that wearing a black hat would attract the stinging bees and thus keep them from stinging the operator. Our experiences teaches us to wear lighter-colored apparel, with a good veil, and thus prevent stirring up the ire of the busy little workers who make for us a living, instead of allowing them to kill themselves uselessly on any thing they do not like.

* * *

DIFFICULTY IN GETTING A QUEEN INTO A LAYING-WORKER COLONY.

That item by Dr. Miller, page 504, Aug. 15, in which he says he saw a laying-worker in the act of laying, is interesting to me, as I have watched time and again without success to see the same thing. Out of the entire number of bees in a laying-worker colony, I once felt sure I had discovered some that were responsible for the eggs on account of their somewhat larger size or appearance, and the fact that their abdomens were distended. But although I marked some of these with white chalk I never caught any of them in the act of laying. If I had had more time I would have placed the colony in an observatory hive where I could watch the bees more closely.

I have never succeeded in getting a laying-worker colony to rear a new queen successfully, even though new brood is given. I have removed the entire lot of combs that contained brood from the laying workers, and replaced them with other combs, some of which contained very small larvæ as well as older brood; but the trouble continues as long as the laying workers remain in the colony. I have succeeded when the colony had not been queenless too long, so that the laying workers did not have too great a start, or when so much new brood was given that the newly hatching bees amounted to a considerable force when compared to the original colony. Simply giving a comb with young brood to a laying-worker colony does much to effect a remedy, according to my experience, as the bees will not rear a new queen successfully. It is also impossible to introduce a queen-cell or a queen to such a colony.

* * *

STUDYING HONEY MARKETS.

One who has never actually investigated or looked thoroughly into the marketing question is incapable of saying much about this vexatious problem. For instance, my own experience, although of many years' standing, may not do the other fellow any good; for, although I have been able to market crops of honey most successfully year after year, the other fellow's market may require a very material change from my own methods.

Recently I have studied the honey market of some of our large cities. It has always been somewhat of a wonder to me why none of the leading grocers in those places handle any of our honey put up in our own regular friction-top pails. Since these are standard-size packages here in Texas and Oklahoma, and since thousands

Continued on page 742.

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

No rain of consequence since early in October.

* * *

There has seldom been a year that has brought as many inquiries for bees, with as few offered for sale, as the present season.

* * *

Mr. J. Ford Sempers, page 618, Oct. 1, questions the line of flight of a bee as being what is termed a "bee line." There is no question about his reasoning under the conditions he mentions; but it should be remembered that bees follow the course of least resistance. When in the open field, with no wind to hinder, they go just about as straight as wings will carry them.

* * *

The question of artificially ripening honey is agitating the minds of New Zealand beekeepers. Some Californians have tried this to their sorrow, and a few are prone to continue the practice. Buyers have been "stung" so often that now honey must have a good body in order to attract them, and you can not get it by extracting nectar and expecting it to make a good grade of honey. Better put on some more combs and let the bees ripen it. They are past masters at the business.

* * *

Riverside County beekeepers have organized a county club with T. O. Andrews president, and H. J. Warr secretary and treasurer. With these two men at its head the new club should succeed. Mr. Andrews is too well known to need any further introduction, and Harry Warr is one of those progressive, energetic young enthusiasts who manage to attend every important gathering of beekeepers. Good luck, Riverside! We have some of your residents in our club. If you can catch any of ours over in that valley, rope them in.

* * *

Mr. Editor, page 647, Oct. 15, you say, "Moreover a carload shipment of bees from Kansas where foul brood is prevalent was kept from being shipped into the State." I am curious as to whether those bees were known to be diseased. If not, on what ground could an interstate shipment be stopped? This sounds something like the rumbling of some of our California County ordinances that seek to prevent the shipment of bees from infected districts or from within many miles of where infection is known to exist.

There is one apiary in this county that has never been known to have foul brood, while within the past ten years no other within miles has escaped it. This owner should not be deprived of his right to move them where he choses because his neighbors have had diseased colonies.

[Let us hear from Wesley Foster on this subject.—ED.]

* * *

Recently I gave a report of the action of our county supervisors, stating that they had suspended County Bee Inspector Herron. Well, everybody thought that was the last of Herron's *regime,* so petitions were circulated for the appointment of a new inspector, and presented to the board, only to meet with the information that Herron was still inspector; and from what I can learn he is still drawing his salary for office time that he never puts in. If any one should be interested in my opinion of this matter I would say that it is about as dirty a piece of politics as I have known of in this county. There are men on this board who have been on it for years while we have been fighting for Herron's removal. Men who are now on the board promised eight years ago, when we were fighting for Mr. Herron's removal, for cause, that, if complaint was made again, he would be removed without further question. Since that time two grand juries have recommended his removal, and still he hangs to the job in spite of our efforts. Some of these men are up for election this fall; and while this will not reach its readers until after election, I sincerely hope that the voters' district will see fit to let them retire to private life. I have had great respect for the present chairman, and in some respects still have, but he has played politics with us beemen long enough. Some of his friends will doubtless resent this; but I say it without fear or favor.

This only goes to show the need of a State-wide law to regulate the inspectorship and to put it into the hands of the beekeepers themselves. At the last meeting of the San Bernardino County Association we voted to let the removal of Mr. Herron go, and to work for a State law by which we could cause his removal without having to humiliate ourselves before the county board of politicians who think more of their jobs than of our interests. If all beekeepers in California knew what a hard fruitless fight we have had in this county they would back the new law to a man.

Conversations with Doolittle

At Borodino, New York.

WINTER ENTRANCES.

"I suppose it is time that the bees be fixed for wintering. What about the size and location of the entrance?"

"That depends on where you expect to winter your bees."

"Well, I winter about half of my bees in the cellar and half on summer stands."

"For cellar wintering our best beekeepers hardly use what might be termed an entrance, as hives are often piled break-joint fashion, so that nearly the whole of the bottom of the hive is left open over a space the depth of the full hives below, as the ends of any hive on top rest on the ends of two other hives below. All bottom-boards are left off when wintering on this break-joint principle. And, strange as it may appear, the bees will often hang below the combs in a cluster as large as the crown of a hat. This is one of the very prettiest sights, to my way of thinking, that ever greets the eye of an apiarist. To see these great clusters hanging below the combs, all motionless in midwinter, gives an indication of a good crop of honey the coming summer.

"Where hives are not piled on the break-joint plan, bottom-boards are generally used that have a winter side as well as a summer side, the winter side being two inches or more deep, so that, if we say we have an entrance at all, such is two inches deep by the whole width of the hive. An entrance such as is used in the summer would be so small that the bees dying from old age would clog it. Then a general commotion is the result, and the bees worry themselves so that their usefulness when spring opens is badly impaired, if the untimely death of the whole colony is not the result."

"How about entrances for wintering on the summer stands?"

"Where unmolested by the hand of man, the bees, as a rule, cluster between the combs where the last brood emerged, for here are the most vacant cells. And this brood is generally right back from the entrance, and nearer or further off, according to the amount of stores which the hive contains. If the hive is well supplied with stores, then the last brood reared will be close up to the entrance in from three to five combs; but if the stores for winter are light, then the last brood will be in these same combs, but often back as far as the middle of the hive. At these points the bees can cluster the most compactly by means of the empty cells; and, being surrounded on most sides with honey, and plenty of pure fresh air from the entrance, they are able to pass the winter in safety unless the winter is long, with a period of five to six months without a flight. Such a winter (not of extreme cold, but not warm enough to give the bees a flight), through this long confinement, chronicles the loss of many colonies, no matter what the stores or where the entrance is located. However, even in such a winter a proper and well-located entrance, and good stores, will enable many colonies to pull through in fairly good shape, while, lacking in either, the mortality would be much greater."

"Please tell me what is a proper and well-located entrance."

"I always face my hives south, and keep them thus at all times of the year, for in this way the sun has an equal chance at both of the sides, while the entrance end is always warmed and dried out by the midday sun. I consider this a great advantage where outdoor wintering is practiced. Then, as hinted at before, the entrance should be right in front of the ranges of combs which the bees occupy, so that the air can be allowed to circulate between those combs which the bees are occupying by their winter cluster. Suppose your hives face south; then if the ends of your combs are toward the entrance, which they always should be, to my way of thinking, your entrance should be midway on the south, so that the air will come in directly in front of the cluster. In this way the bees will not want for pure air.

"But suppose you had allowed the entrance to be near the east side of the hive all summer, so that the last brood which emerged was near that side of the hive, and, thinking that better results would accrue during winter, you made the winter entrance at this time of the year on the west side, the air would not come direct between the combs the bees are clustered on, but would have to pass under and around the combs till it arrived in scanty amount where the bees are, in which case the bees would be likely to suffer from want of pure air, resulting in poor wintering.

"My way has been to allow an entrance the whole width of the hive on the south and seven-sixteenths inch deep. The air then can come in between any and all ranges of comb. This, with a windbreak, so that the wind can not blow directly in the hive, has given the best results."

General Correspondence

DON'T MIX HONEY WITH SYRUPS

Enough Suspicion of Pure Honey Already

BY MAJOR SHALLARD

I think Mr. E. W. Peirce's idea of mixing honey with "Karo" or any other syrup, July 1, p. 409, is much to be deprecated. Once let the public mind associate honey and syrup, or honey adulterated by any thing at all, and you will do the industry an immense amount of harm which it will take years of effort to remedy.

In bottling honey for the grocery trade in Sydney (a city of 600,000 people) I came into competition with adulterated honey; *viz.*, glucose (I put this first because it was the basis), sugar syrup, and honey; and as this could be put on the market at a lower price than my pure honey, I found it hard to keep my trade. The trouble appeared to me to be this: That the adults did not eat honey, and the adulterated stuff did well enough for the children; and as most homes have a scarcity of cash, the cheapest got the preference. If these people would only think a little, and realize what future trouble they are laying up for their little ones in liver and kidney disease, through this stuff, I feel sure they would not have it in the house.

There was absolutely no comparison between my pure honey and the opposition mixture, and after the peope came to recognize this, the former more than held its own.

At one time I thought of putting a cheap honey(?) on the market to compete with these adulterators. I got a cask of glucose and some sugar, and experimented with various strengths of glucose and various qualities of honey. I found that the darkest (almost black) honey gave the best results. It gave the most cash, and it was possible to mix up stuff (it was *stuff*, it was not honey) that would give satisfactory tests in the polariscope, but there was no more comparison between it and the honey I was bottling than there is betweeen a trust magnate and an honest man. We, my helpers and myself, had bottles of various mixtures all over the place; and continually tasting the stuff made us all sick.

We all got so full of the stuff that any smell of glucose at all used to make us feel ill, and I decided that, if it was not good for me, it was not good for any one else; and so I gave up the idea altogether. I got the manufacturers to take the glucose back, and stuck to the pure honey.

There was never any question about my honey, as it was the product of my own apiaries; but the public became so suspicious about adulteration that I found it necessary to put the following on my labels: "I will give £20 to any one who can produce a bottle of my Blue Mountain honey which is adulterated."

This settled all argument so far as I was concerned; but they were still very suspicious where other honeys (many of them absolutely pure) were concerned.

For the last few years we have had a pure-food act which is rigidly enforced. Under this act all foods must be accurately described on the label, and net contents of the packages given; but the manufacturers dodge this to some extent. For instance, the honey adulterators put this on their label: "Honey" in large type; and underneath, in very small type, "mixed with saccharine matter." If they put "Honey adulterated with sugar and glucose," the people would not buy, and that is really what it is because it is impossible to get sufficient consistency without the glucose. Some of the manufacturers put the incriminating label under the bottle; but the board of health stopped it. The board of health carries out its duties well and efficiently, and woe betide the trangressor if they catch him. They are continually catching people for diluting milk, and they fine them very heavily—fines being inflicted from £10 to £25. An inspector visited my bottling place one day and remarked with a smile, "Putting up honey and sugar?" I told him if he could find any sugar or glucose on the premises I would make him a present of it, and also of a £10 note. Then I took him down to where several gross of bottles were ready to go out, and told him to read the label. "Now," I said, "you take that bottle home and earn that £20." Well, I could not induce that man to take any honey away at all—not even as a present. But, as I said at the start, if the public once becomes convinced that some honey is adulterated it takes years and years to get the idea out of their heads.

Even now, in spite of the law, nine people out of ten will tell you that "it is not possible to get pure honey in Sydney," which is absolute nonsense, because you can get it at almost every grocery; but you can not make the people believe it. Every now and then, people will come to one of my apiaries and buy some honey, and they will say, "Ah! this is the pure stuff. I can't get honey like this in Sydney,

you know;" whereas tons and tons of exactly the same honey are being sold every year in Sydney; but you can not get them to believe it.

No! take my advice; don't mix honey and syrups up in the public mind or you will never cease to regret it.

Moreo, N. S. Wales.

[We do not understand Mr. Peirce as advocating the selling of a mixture of honey and glucose; we think he would agree with our correspondent that such a plan would prove disastrous in more ways than one. His suggestion, if we understand him correctly, was to publish a recipe or formula, to be used by the consumer only.

Personally we do not like the taste of corn syrup, or glucose, as it should be called, when mixed with honey in any proportion.—ED.]

AMERICAN FOUL BROOD

A Plan for Simplifying the Second Shaking by Giving the Bees Two Drawn Combs in Addition to Full Sheets of Foundation when They are Shaken the First Time

BY E. D. TOWNSEND

As foul brood exists in 52 of the 72 counties of Lower Michigan, it behooves us as beekeepers of this State to keep well posted along the line of fighting disease or we may wake up some morning and find it too late. No one can make a success of bees in a diseased location unless he learns the characteristics of American and European foul brood, knows how to treat the two diseases successfully, to keep it in check, and to produce a paying crop of honey.

This is my first attempt to write on the subject of American foul brood, although we have had the disease in one of our yards for the past twelve years. Aside from this experience I have helped my neighbors to some extent. Some may wonder why we did not get rid of the trouble before it ran so long. In the first place, we had neighbors close by who had disease among their bees, and there probably was disease among the wild bees in the woods. Then it is easier to talk about eradicating disease than to go ahead and actually do it. It is likely to crop out in the most unexpected places.

It is a question with many whether the spores of American foul brood live long outside of old brood combs or sealed honey. My experience indicates that these spores soon lose their vitality when adhering to hive sides and fixtures, and I have often thought that the thin coating of honey adhering to *new* combs after extracting is not sufficient protection to the spores, and that they, too, soon succumb and become harmless, especially after being exposed to the cold temperature of our northern winters.

FOUL BROOD IN EXTRACTING SUPERS.

Some writers think that very few of the bacteria find their way into the supers during the honey-flow; and for that reason not many, if any, adhere to the extractor reel after extracting comb from a diseased colony. I take no stock in this belief, for I am positive that millions of bacteria are carried above by the bees in the process of ripening honey. I will give just one instance to illustrate this point.

One of my neighbors had ten colonies of bees; and as he had secured no surplus he wanted me to work them for him. More as an accommodation than for what I expected to get out of the bees, I consented. The result was that we got a thousand pounds of honey and lost the *extracting* combs we took there, for we found American foul brood in them later. The amount of honey that we secured shows that the colonies were strong, and that they did not have the disease very bad. As was our practice we used no queen-excluders. The upper stories were put on about June 1, and about August 1 we found many of the combs in the upper stories rotten with disease, for the queen had taken possession of many of the first stories given. After this experience it would take considerable to convince me that few bacteria of American foul brood are carried above into the extracting-combs during the honey-flow. We know that the spores of American foul brood may live twenty years under favorable conditions. Now, what the honey-producers want to know is how soon these spores lose their vitality under unfavorable conditions.

In handling American foul brood it is absolutely necessary that the apiarist provide himself with a bee-proof honey-house. Robbing must be prevented; and the careless handling of bees, causing them to mix from a diseased colony with a neighboring healthy one, must be avoided.

HOW TO INSPECT QUICKLY.

Our working plan is about as follows: Just before the opening of the clover flow, which is usually about June 1 in this locality, we go all over the yard and take from each brood-nest two combs containing the oldest brood. These two are examined very

closely for disease; and if none is found the colony is considered healthy. Each diseased colony in the yard is marked according to its strength in bees. Extracting-supers of white clean combs that have never been used by the queen are given to the healthy colonies above queen-excluders. Those marked "bad" are left as they are until the approach of the honey season, when they are treated as follows.

OUR PLAN IN DETAIL.

Any time during the day, provided robbers are not allowed to get a taste of the diseased honey, we remove from all of the diseased colonies every comb that does not contain brood in a quantity worth while saving. These are extracted, and then rendered into wax. When removing these combs of honey or empty combs, as the case may be, the brood-combs left in the hive are loosened, and spaced a little wider than usual for convenience in handling them later. About every fourth colony, however (we try to select those lightest in bees), is left with the combs spaced as usual, and pushed over to the side of the hive; for in these hives we afterward stack the diseased brood from the other colonies for the purpose of allowing it to hatch.

We now return to the colonies to be treated. Remove the old hive to one side, and in its place upon the same stand put a clean ten-frame hive containing seven frames of full sheets of foundation, and two drawn combs (if it is an eight-frame hive, five frames of foundation are enough). A cover is then put on, and a wide alighting-board put in such a position that the bees and queen will have no trouble in finding their way back into the hive when the combs are shaken. We then shake off the bees that can be dislodged without spilling a particle of honey, using a brush to get the rest of them. These five or seven combs of diseased brood, according to the strength of the colony treated, are now carried to the light colony mentioned above. The light colony will care for the capped brood in three stories; and as we do not care to preserve unsealed brood, as I will explain further on, a colony of this size is large enough for what we want of it.

The two drawn combs given the treated colony really save one shaking, or nearly so, and one day in the time taken for the double shaking plan. It is a fact that, with any method of freeing the diseased comb of the bees, much diseased honey is carried into the clean hive with the bees; and the secret of success lies in one's ability to get the bees free from this diseased honey before storing any honey in their new quarters. These two empty combs accomplish this result. Let me digress.

MORNING, NOT EVENING, THE BEST TIME TO SHAKE.

For several years I have felt that the practice of shaking bees at night in the treatment of disease is all wrong. It is advisable to treat American foul brood during the honey-flow, and at night, after a day's work in the field, much nectar is stored that shakes from the combs at a mere touch, so that it is impossible to get the bees from the combs without spilling considerable of this thin honey. It is not desirable to let this get into the clean hive. Furthermore, aside from what is shaken out of the cells, the honey-sacs of the bees are full of this thin nectar, in the process of evaporation, so that a more undesirable time to do this kind of work could not be selected.

Brushing bees from diseased combs without first shaking off the majority of them is rather too slow a process. It takes so long to get the bees all off a set of combs that many of them have time to fill their sacs with honey and carry it to the new hive. This we do not want.

In the morning, on the other hand, the honey from the previous day has been evaporated to such an extent that none is shaken from the cells, and the nectar in the process of being evaporated from the previous evening is cured and stored to quite an extent.

Taking advantage of the fact that the honey in the combs will not shake out, and also that the bees have disgorged themselves of the honey in their honey-sacs, we are ready to remove those two combs before mentioned, and it is done as follows:

The first morning after the colony is shaken from the diseased comb we quietly remove the cover of the hive, give the bees a slight puff of smoke, so that they can be handled, and in less than a fourth of a minute, and before hardly a single bee realizes what is going on, they are shaken from these two combs, and three more full sheets of foundation put in their places. The hive is now closed up nearly destitute of honey. One will be surprised at the amount of honey in these two combs after only the one day. Even when there is but little coming in from the fields, the two combs will be quite heavy with honey, showing the need of taking it away.

Some may ask if we do not lose two extra combs by this plan. We do not, for it sometimes happens that we have some undesirable combs that we can use for this

purpose. And in case we do not, we select some of the outside combs from the colonies having the least disease for this purpose. We take those that contain no brood and but little honey. Even if there should be a little sealed honey it will do no harm so long as there is room for the bees to store what honey they bring with them in their honey-sacs when they are shaken from the old combs.

The weak colonies on which the brood is stacked up are treated later in much the same way as described above. I will give full particulars in my next article.

Remus, Mich.

(To be continued.)

EXPERIENCES OF A FOUL-BROOD INSPECTOR

BY J. E. CRANE

[This is the first of a series of articles describing beekeeping in Vermont as seen by J. E. Crane while serving as State inspector.—ED.]

I know of nothing in the whole realm of beekeeping that will knock the conceit out of an old beekeeper more effectually than inspecting bees and visiting all kinds of beekeepers. Where one least expects it he will find new devices and short cuts as well as the densest ignorance. He will also meet some of the most charming beekeepers who will send him on his way rejoicing, and others whose acquaintance he will not care to court, but whose ways he must put up with.

I was very fortunate when commencing my work as an inspector. I had had considerable experience with American foul brood, but knew little or nothing of the European type except what I had read. My first visit was in a town where this disease had been doing its deadly work for several years, and almost every yard in the place was more or less diseased. One of the most intelligent beekeepers of the town took me to his home, then out among his bees, and in the most kindly way showed me the character of the disease and his method of combating it. I shall ever hold him in grateful remembrance. He also introduced me to some of the other beekeepers whose yards were badly diseased.

The beekeepers of that town are, as a rule, much above the average, both in intelligence and in enterprise; and upon following my advice the locality, within a few months, was practically free from that disease. I know of but one yard there where it exists to-day; but the territory will have to be watched for a few years to prevent its reappearance.

I have often read in our journals that European foul brood is very apt to break out in yards that have been cured. I attribute this largely to the fact that more or less of the diseased colonies have remained or have been overlooked, forming a nucleus from which the disease again spreads. Even in localities that an inspector has examined with care, and that are supposed to be free from disease, he is apt, upon making a second inspection, to find new yards, which, although small, are large enough to harbor disease and spread contagion.

Our State law requires that an inspector shall visit diseased yards a second time to make sure that directions have been followed and the disease cleaned up—a wholesome provision! But after making careful inquiries I find I have overlooked yards where disease existed. Even if the inspector were able to find and to examine every yard in a section where foul brood exists, yet the danger of contagion from bees that have escaped and have found a home for themselves would still remain in many places.

This home may not necessarily be a bee-tree in the woods, as we are accustomed to think, but an apple-tree in the orchard, or the cavity between the inner and outer wall of a deserted house, or even the steeple of a church or the attic of some house whose inmates have never suspected the presence of bees.

One bee-hunter told me of finding colonies in a brush-heap, among stones, and in an apple-tree in a neighbor's back yard. I once took a colony from a neighbor's attic. There is nothing to prevent these wild bees, as we call them, from contracting disease, and, later, from spreading it among bees which have been treated previous to that time. I met three experienced bee-hunters in 1911 who told me that they had found diseased brood in colonies taken from trees. One of these men was an intelligent and somewhat extensive beekeeper who at one time lost all of his bees because of foul brood, and I believe his statements should be taken at their face value.

Now, I think we should not consider any given section cleaned up until there has been time for all of these wild colonies to die off, say two or three years; then if the disease does not reappear in any yard, that particular section may be safely pronounced free from further trouble.

The law of the State under which I have worked makes it the duty of the inspector, when he finds a contagious disease, to visit all apiaries in the vicinity, so that, if possible, he may learn just how large an area

J. E. Crane at work inspecting an apiary.

is subject to disease, and how many apiaries are affected. In the half of the State that I cover I have found five or six such centers of infection that I have been able to locate, and two or three where the disease has appeared and has run its course, destroying all before it, and then itself disappearing. In one such case, after finding almost every yard diseased, I thought it my duty to visit the towns adjoining. The location of these is somewhat peculiar, as the town itself is separated from the towns on the east, south, and west by water varying in width between half a mile and a mile. But as the bees crossed the water freely for forage during fruit and clover bloom I thought I might look for disease. I was, however, most agreeably surprised to find every colony in these adjoining towns free from any taint of foul brood. This experience satisfied me that bees are not likely to carry the disease across half a mile of water. How far they will carry it when no water intervenes I have no means of knowing. I have, however, come to the conclusion that a good-sized mountain will check the spread of disease. In fact, I have some very good proof of it.

Speaking of centers of contagion, one of the worst was in my own county, and consisted of about 250 colonies occupying an area almost equal to that of an ordinary town. These bees were scattered through eight or ten yards, in some of which almost every colony was diseased. I did not rest until I had learned just how far in each direction the disease was to be found, and had every owner of bees at work making an effort to get rid of the disease. I did not expect that it would all be cleaned up the first year; but I believe at least nine-tenths of it was.

An interesting question comes in right here. How far will bees go to rob a colony weakened by disease? I frankly confess that I don't know; but I was told by one beekeeper that they will go three-fourths of a mile. Another had heard of their going 1¼ miles to rob other hives.

Disease is also spread by careless beekeepers who leave out of doors, for the benefit of other colonies, the hives in which diseased bees have died. The rank and file of beekeepers do not seem to have the slightest idea of the character of foul brood, nor how to prevent its spread.

The careless use of comb foundation, too, has helped to spread this disease. When a beekeeper has learned the use of comb foundation he often hives swarms that have issued from foul-brood hives on foundation; and the honey carried by the old bees to the new hive, and there stored in the rapidly built combs, often makes trouble later.

Middlebury, Vt.

To be continued.

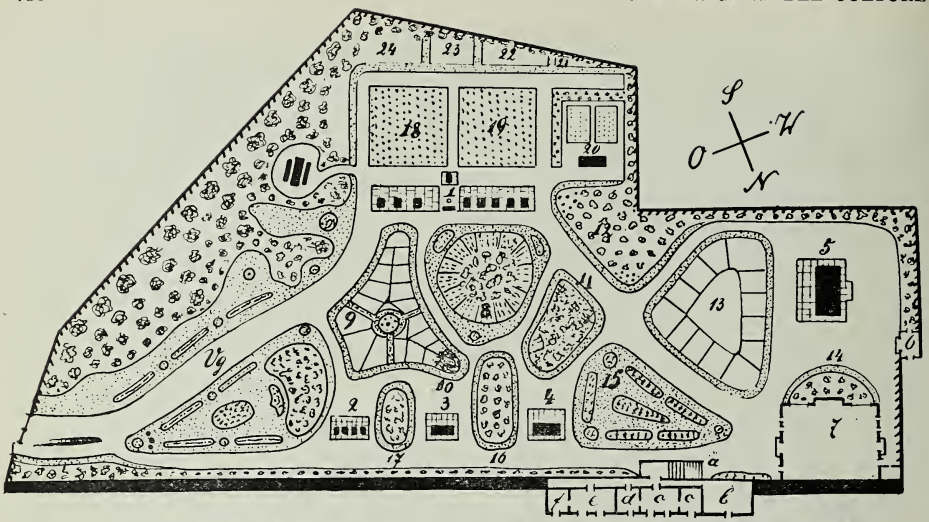


FIG. 1.—PLAN OF THE ROYAL INSTITUTE FOR BEE CULTURE AT ERLANGEN, GERMANY.

1. Bees in hives of different styles; 2. Stocks of different races; 3. Stand of bees for experiments; 4. Bees in skeps of different styles; 5. Model bee-house; 6. Garden-house; 7. Museum; 8. Bed of spring pasture; 9. Bed of summer pasture; 10. Watering-place for bees; 11. Late-flowering bee-plants; 12. Fruit-trees; 13. Agricultural bee-plants; 14. Decoration bed; 15. Bed of plants to show relation between bees and flowers; 16. Berry-trees; 17. Decoration bed; 18, 19. Bee flowers; 20. Students' bee-stand; 21. Meadow ground; 22. Corn-field; 23, 24. Industrial bee-plants.

A MODEL INSTITUTE FOR SCIENTIFIC AND PRACTICAL BEE CULTURE

BY R. LINDE

[In America there are at least four universities at the present time in which bee culture is featured as an elective part of the regular course; viz., the Ontario Agricultural College, the Wisconsin College of Agriculture, the Massachusetts Agricultural College, and the Agricultural and Mechanical College of Texas. In our Oct. 1st issue were several pictures of the buildings and equipment used in the study of bee-keeping in Massachusetts. The following article shows the extent to which beekeeping is taken up in a prominent German university.—ED.]

In GLEANINGS for Dec. 15 I endeavored to draw the attention of the fraternity across the water to the work carried on at the Royal Institute for Bee Culture in Erlangen, Germany. It is my privilege now to give a description of this institute, showing how it is arranged and equipped.

Erlangen is a small town in the kingdom of Bavaria, the largest state in Germany except Prussia. Erlangen seems to be noteworthy on account of its university, to the zoological institute of which the Royal Institute for Bee Culture is linked.

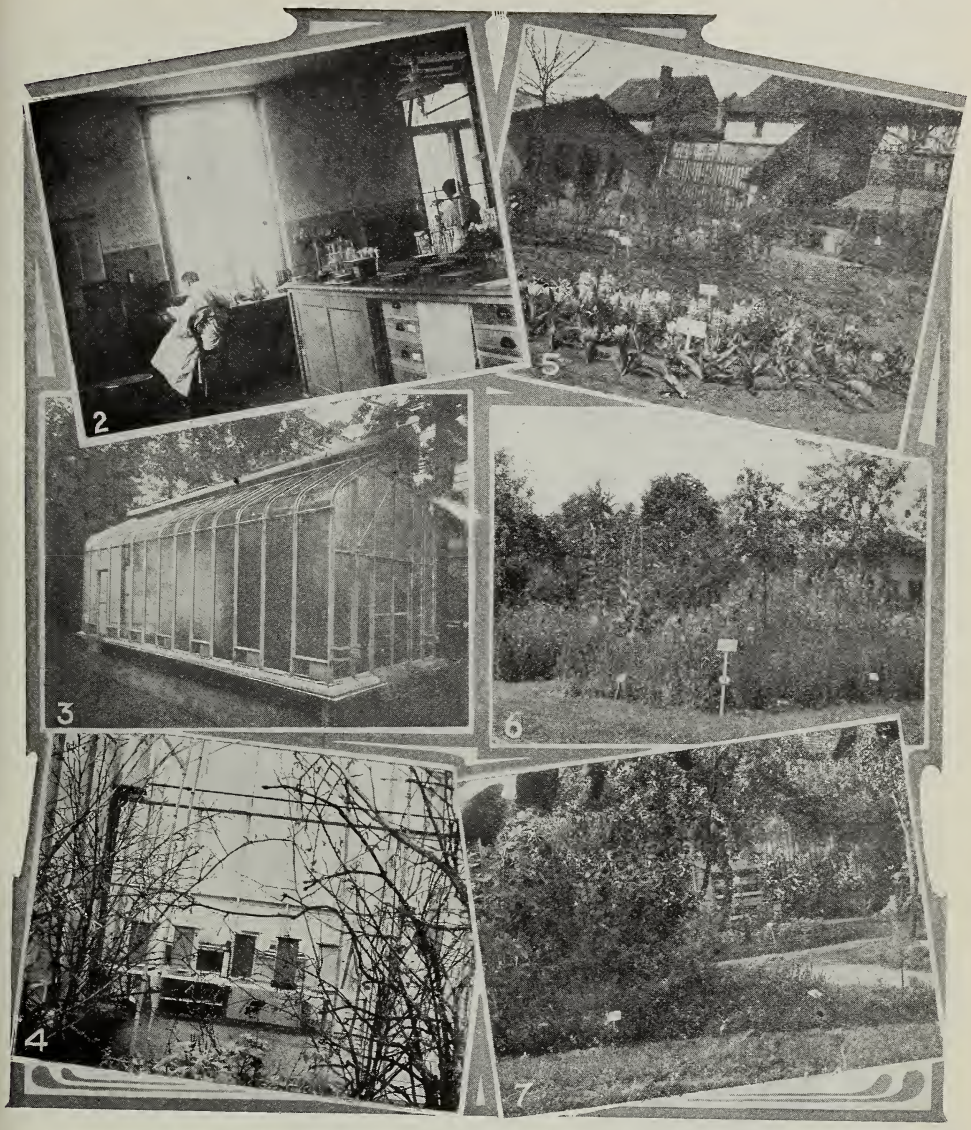
Formerly the institute was divided into a scientific and a practical department; but that division does not seem to have been of any advantage generally, for it has been abolished. There are more places in Germany where bee science is cultivated. However, at Erlangen beekeeping as a science is brought into intimate contact with practical bee culture. That is what distinguishes the Royal Institute at Erlangen. So far as I can conceive, personal ambition (the abscess on the body of German bee industry) has no particular place at Erlangen, where a most sincere desire to render useful service to practical bee culture seems to be the moving power in the main.

GENERAL ARRANGEMENT.

Fig. 1 shows a plan of the institute. The laboratory, Fig. 2, being situated in the building of the zoological institute, is thoroughly equipped with the newest and best instruments and apparatus for carrying out zoological and bacteriological studies. An interesting and very necessary implement is the glass house, Figs. 3 and 4, ready for use in the garden of the zoological institute. This glazed bee-house supplies the bee-material required during winter time, and is divided into a small working room and a large partition where the bees can take their flight. Fig. 4 gives a view of the inside of the bee partition. A few nuclei in single-comb observatory hives are kept here over winter. Branches of hazel, alder, cherry, and similar trees are put into water and come soon into bloom in the glass house, the temperature of which is kept at 64 degrees F. The bees are eager to carry in the pollen thus afforded. The glass house is covered with dim glass, with the result that the bees soon become accustomed to the limited flying space.

THE VEGETABLE BIOLOGICAL PLANT.

This is a very interesting part of the institute, and demonstrates the close rela-



2. The laboratory; 3. The glazed bee-house where bees can take a flight during winter; 4. View of the inside; 5. Springtime bee pasture; 6. Summer pasture; 7. Late-flowering bee-plants.

tion between bees and flowers. Three beds (9, 8, and 11, Fig. 1) are occupied with bee-plants grouped in accordance with their flowering time. Thus on one bed you may see the principal flowers yielding nectar and pollen during spring time (Fig. 5). On another bed all the important bee-plants of summer are grouped together (Fig. 6), and a third bed shows late-yielding bee-plants, the most important of which is heather, Fig. 7. Agricultural plants of value for the bees are placed on a bed by themselves, as in No. 13, Fig. 1, and further beds are devoted to plants showing especially well the intimate relation between flowers and bees.

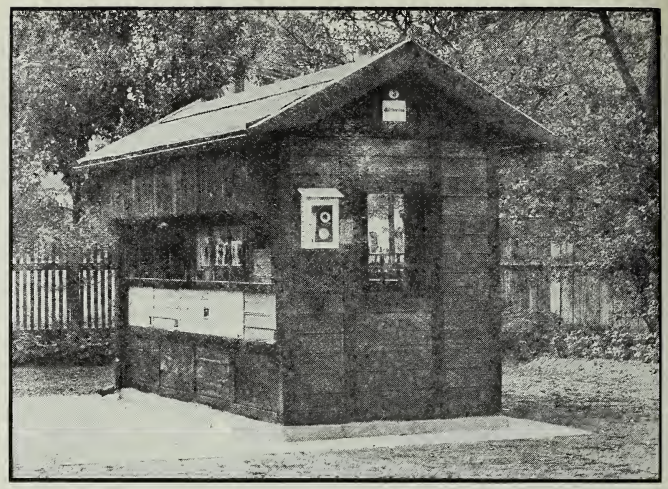
THE BEE-GARDEN.

With taste and skill the different bee-stands are distributed among the equally well-arranged flower-beds and fruit-trees. The position to the right of the decoration bed, 17, Fig. 1, is occupied by four stands of bees representing four typical races (golden Americans, Italians, Carniolans,

and German blacks). The hives are painted a dazzling white, and thus afford a good background for the colors characteristic of the different races.

On the other side of the decoration bed mentioned is a stand with colonies for experimental purposes that may be seen in Fig. 9. In the foreground of this photo a very interesting watering-device is shown that supplies clean water for the bees when in need of it, as in early spring. On an unpolished plate of granite, placed toward the south, at an angle of 45 degrees, fall drops of water from a pipe having 12 outlets. The plate of granite absorbs the rays of the sun so thoroughly that the temperature of the down-flowing water rises soon to about 76 F., while the temperature of the air does not rise above 43 F.

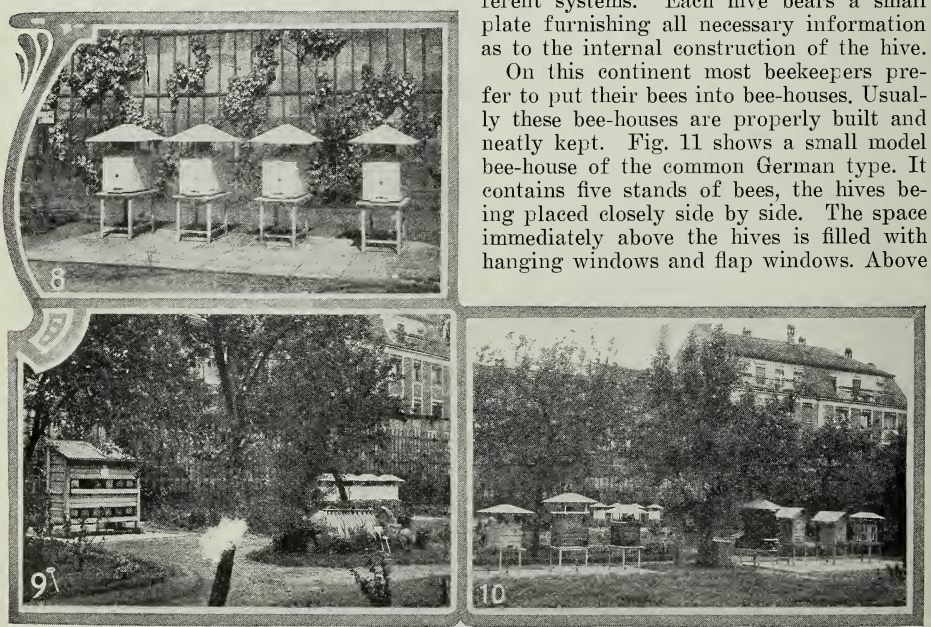
A very important point in favor of this watering device is the ease with which it can be kept clean. As the water is constantly flowing, the danger of infection is very remote.



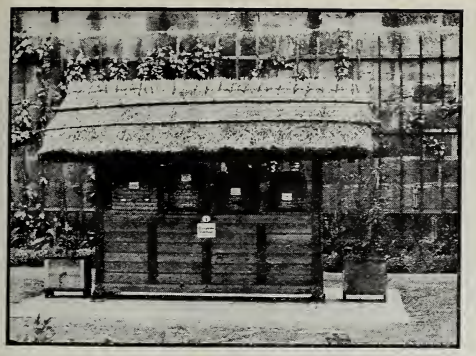
11. A small model bee-house of the common German type.

Owing to the fact that in this country a great number of different constructions of hives are in use, the institute maintains a special stand (No. 1, Fig. 1) where bees are kept in the more important types of hives side by side. Thus visitors and students have an opportunity to compare the advantages and peculiarities of the different systems. Each hive bears a small plate furnishing all necessary information as to the internal construction of the hive.

On this continent most beekeepers prefer to put their bees into bee-houses. Usually these bee-houses are properly built and neatly kept. Fig. 11 shows a small model bee-house of the common German type. It contains five stands of bees, the hives being placed closely side by side. The space immediately above the hives is filled with hanging windows and flap windows. Above



8. Different races of bees side by side; 9. Bee-stand for experimental purposes, and the special watering-device; 10. Bees in different styles of hives.



12. Bees in different styles of skeps.

these, just below the roof, there is a box-like construction projecting through the wall (as the photo clearly shows) to accommodate spare combs. The small white painted box on the outside, next to the door, contains meteorological instruments. The working-room of the bee-house is provided with work-bench, washing-stand, oil-stove, and shelves for feeders and appliances.

Skeps are, I think, a rarity on your continent, although I have met people who told me they had taken skeps with them when they emigrated to America. But I suspect those skeps have, in most cases, found a place in the poultry-yard as hens' nests.

In Fig. 12 four of the most common types of skeps are united under an old-fashioned straw roof that corresponds nicely with the character of the skeps. The first skep, on the left, with its trunk-like appearance, contains movable combs held in position by means of pins. The next one has the peculiarity that it can be supered like a modern hive, though its cylindrical shape precludes the use of movable combs.

The editor permitting, I will give, in a future contribution, a description of the way the skeppist treats his bees and gets his honey. I will not neglect to mention that for students there is a special bee-stand at the institute (No. 20, Fig. 1) on which manipulation can be practiced and the necessary skill acquired.

The work-shop and store-rooms are close to the bee-garden, and accessible over the stairs *a*, Fig. 1; *b* is a storing-room for timber; *c c* are work-shops in which the students are taught to make hives, etc.; *d* is an extracting and rinsing room; *e*, an office; *f*, a bee-tight comb-chamber.

The museum contains hives and appliances of the past that are of historical value.

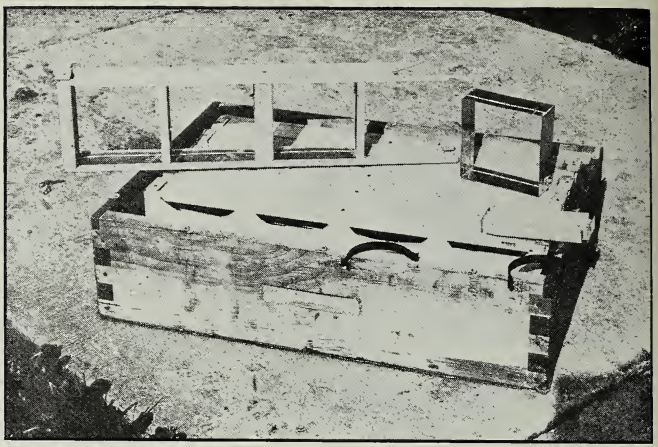
Very little stress is laid on honey production, for this garden is mainly devoted to instruction and scientific and practical studies. However, the institute would lose somewhat if the feature of honey production were entirely neglected. For that purpose a few out-apiaries are maintained. One of these is so well situated that it answers all requirements for a fertilizing station for queens. Race culture is the motto in the queen-rearing line now in this country; and by "race culture" it is always the black bee that is meant; all efforts are made to purify and improve the neglected blacks. I hope to be able to devote to this matter a special article later on.

According to its aim and its special tasks the work in the bee-garden is carried on with every precaution possible against the danger of infection. The different bee-stands are distributed over a large area, and each one is placed on a pavement consisting of plates of lime which are carefully cleansed every day. Combs belonging to different hives are never interchanged; each frame bears the number of the hive to which it belongs. No comb is used longer than two years in view of the fact that

13. Students of a short course held at the Royal Institute for Bee Culture at Erlangen, Germany. 1. Professor Dr. Fleischmann, the director; 2. Professor Dr. Zander, the managing director of the institute.

it is the comb that carries the germs of disease—the more easily the older it is.

A number of short courses are held annually to instruct beekeepers in all branches of the craft. Fig. 13 shows a group of students who attended a short course in 1911. After my description of the institute this photo might be of interest, as it shows, in the midst of the students, the men whose efforts built up the institute and whose spirit permeates its works and doings.



Paul Hunten's super for holding tin sections. Notice that the section-holder fully surrounds the four sections, being somewhat similar to the wide frame.

It is, after all, the spirit emanating from such a place of science and practical work that imparts deeper and more lasting results than the teaching of mere science, however exact and wonderful, or the teaching of mere practice, however useful and profitable.

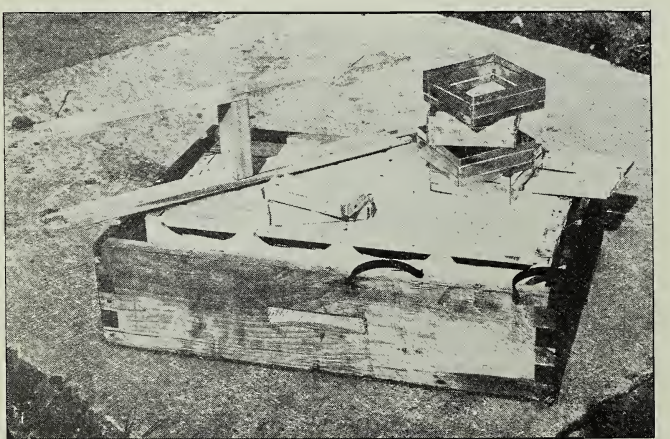
Wendhausen bei Hildesheim, Germany.

COMB HONEY IN TIN SECTIONS

An Entirely New Method of Marketing Comb Honey, Obviating Much of the Loss from Breakage

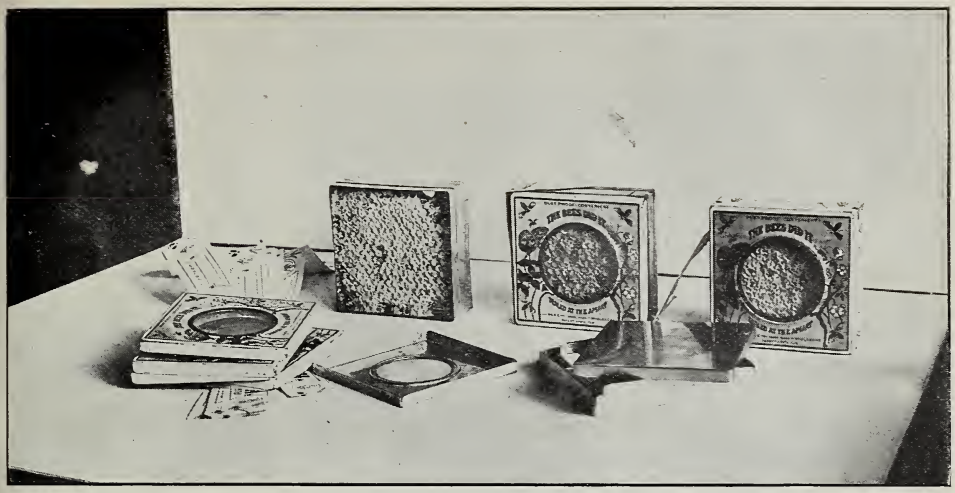
BY PAUL HUNTEN

Too little attention has been given by the producer to the marketing of his honey. His pretty wooden sections that leave his apiary nice and clean, after passing through the hands of several middlemen are apt to reach the consumer with an accumulation of dust that can not be wiped off. This is sometimes barely noticeable to the naked eye, and yet the dust is there. All kinds of crackers and other food products are now put up in separate packages instead of in bulk, and the consumers are glad to pay the extra price for the sake of having the food free from contamination. I know of a case of honey that stood in a prominent place in the only store of a town; and, although it remained there for weeks, the contents were sold very slowly. In order to call attention to the honey it was often taken out of the display package and put in the show-window, where it gathered dust and germs. For some time I had been working on the new plan of using *tin* sections; and as soon as I had fifty packages off my hives and ready for market in the tin boxes I displayed in this store in competition with the wooden sections; and, though the latter had been on sale for some time, the clerks told me that the entire lot of fifty tin boxes could have been sold inside of an hour.



The section-holder with the four tin sections slipped out, the end-bars being removable.

The three illustrations show my super with the section-holders, and also some of my honey as it appears ready for market. There is absolutely no



Labels, tin boxes, and the finished package ready for market. The tin covers, one of them having a celluloid front, are slipped over the tin section, melted wax being used to make a tight package, and then the label is put on, extending completely around the box.

difference in the storing of honey by bees in wood and in tin. This was proven under my own supervision during a test with 2500 tin sections and as many more wooden sections. All were filled without noticeable difference in the time required.

There seem to be two principal objections at present. One is the light weight of the honey in the tin sections, and the other is the cost. The light weight will be remedied by the use of fences that are properly spaced to bring the cappings nearer the surface, and to prevent pop-holes in the honey as much as possible.

Vanderwerken's apiary at Stamford, Ct., at close range.

Mr. Vanderwerken in the midst of one of his strong colonies.

The cost is a harder matter to overcome, as thousands of producers will have to become convinced that it is only a reasonable advance, necessitated by a change from an unsanitary to a sanitary package. The labor of putting up the honey seems to be about the same; but the material will naturally and unavoidably cost more. I have mailed sections of honey to various correspondents; and, although it invariably arrives in good condition, the question in nearly every case seems to be whether it will pay to make the change on account of the additional cost.

I find that the tin package complete costs 4 cts. more than the wooden section, which extra cost is offset in a measure by the difference in expense of the shipping-cases, it being possible to use much cheaper corrugated paper cases that will hold 50 lbs. each. Moreover, there will be the benefit of a reduced freight rate on less than carload rates; that is, the honey in the tin sections goes as fourth-class instead of first-class freight. Some have expressed the doubt whether the railroad companies will maintain this rate; but I think they will, as there will be less cause for claims of breakage than in case of wooden sections.

Somerset, Col.

[It may be said to the credit of our correspondent that he has gone ahead at his own expense in experimenting with the tin sections, making changes wherever necessary, and cutting and trying to find the best combination, all things considered. While perfection has undoubtedly not yet been reached, the matter has gone far enough to deserve careful attention on the part of comb-honey producers.

There is another point not touched upon in the above. Much comb honey is spoiled by being put in a cold, damp place. In this tin package, owing to the fact that the honey is practically hermetically sealed, there should be little change brought about by unfavorable conditions of atmosphere.

As we look at it, the whole matter hinges on the expense. In other words, will the lower freight rate, the smaller amount of breakage, and the protection from dust and germs, offset the relatively great expense of the package?—Ed.]

MY MOST EFFICIENT AND ENTHUSIASTIC PUPIL

BY EDWARD F. BIGELOW.

In a former number of Gleanings I paid my respects to Mr. L. C. Root, the veteran beekeeper of Stamford, Ct., who was my teacher and my inspiration when I first began to study bees. It now affords me

pleasure to introduce to the general public a man well known in Connecticut, and especially in Fairfield County, as the most ardent, devoted, and active beekeeper in existence—a man whom I am proud to claim as my pupil. In a genealogy of apiologists I might perhaps justly include him in the list of Mr. Root's immediate descendants—at least as his apiarian grandchild.

Mr. E. Vanderwerken was my next-door neighbor when I lived in Stamford, and for several years was generally indifferent to my beekeeping proclivities as well as to some other things of the kind so dear to a naturalist. Indeed, I thought him of all people perhaps the least likely to become a student of the bee, and enthusiastic in the subject, because he and his family so strenuously objected to the appearance of my pets on his side of the fence, and above the sidewalk that they must traverse every day. My apiary was only about fifteen feet from the sidewalk. Indeed, my nearest neighbor's objections became so active that the health officer was sent in to investigate, because they thought there must be some serious trouble at the laboratory, near the apiary, as a mysterious aroma pervaded the entire street. This, as has been previously explained to readers of this magazine, was in the autumn when the delightful perfume of the goldenrod was very strong. Mr. Vanderwerken and the members of his family now regard such objections as jokes, and the other day he telephoned to say that my henhouse is still next door, meaning that the odor of the nectar gathered by the bees from the goldenrod is now at its height.

Some efficient and enthusiastic beekeepers date their interest from earliest childhood; others, in later life, come gradually into the joys of beekeeping; while still others are what one may call a sudden conversion with a baptism of sorrow. My pupil is in the latter class. His apiarian baptism consisted of more than a hundred stings, which, I suppose, accounts for his fierce and fiery interest.

About half way between my home and his (a distance of only a few rods) is an extremely tall tree. One day one of my finest swarms made the air black with swiftly glancing lines that moved slowly around the apiary, and upward and upward, almost to the very top of that tree. There they settled and hung, an alluring, tantalizing attraction, too far up, I decided, for me or any one else on my premises to climb. They remained there for two or three days; and Mr. Vanderwerken, going to and from his office, stopped every morning, noon, and night, to express his regret that so fine a colony should be lost. The third day was drizzly, rainy, foggy, misty—a generally moist and sticky day. It appears to have been a leisure day with Mr. Vanderwerken, because he came and volunteered to climb that tree if I would supply him with a veil and gloves. I tried to dissuade him, by magnifying the danger, and I assured him that the swarm was not worth the risk; but he seemed to be fascinated by an irresistible impulse to capture that colony. Finally we obtained a long ladder, and I furnished him with veil and gloves. The ladder was wet; the tree was wet; the bees were wet; and to say that they were cross is to speak mildly. When he arrived among the branches, the cynosure of many admiring eyes (because the neighbors had gathered to see the performance, those bees showed fight, and sent out every warrior in the colony to repel the approaching novice. Neither Mr. Vanderwerken nor any other human being could withstand such an onslaught. The veil was wet; it stuck to his face and was useless. He could not even stop to use the ladder, but slid down that tree as hastily as a fireman, awakened by a midnight alarm, slides down the pole without wasting time on the stairs. It was the most successful instance of attack and retreat that I have ever seen. Mr. Vanderwerken, completely covered with bees, fled into the bush, and there fought with hands and leafy branches to drive away the angry insects. The attack was nearly a fatal one for him; and I wonder if he realizes, even with his later expert knowledge of bees, just how dangerous it was. He was obliged to remain in bed for a time, until his suffering was alleviated.

But by this very experience an unexpected result was achieved. He became a beekeeper. It seems as if every sting was a hypodermic dose of enthusiasm, and to this day it remains in his blood. In my experiences with many and various beekeepers I have not known another one so enthusiastic. He began with two or three colonies; he attended conventions; he talked long and constantly about the delights of beekeeping; he buttonholed his friends in the street; he suspended work in his office, and the result is that he now possesses one of the finest apiaries that I have ever had the pleasure to see; yet when I first saw it I did not realize its perfection, because visually it is irregular, and mottled and speckled. There were, at my visit, boxes of high and low degree, all sorts and

sizes, covered with rough roofs on which tar paper was tacked. In every direction was a display of old carpets, cast-off clothing, bedquilts, blankets—every thing. I never saw such a medley. It outrivaled the apiaries of box hives and hollow logs that were common several decades ago, and may now be seen in a few remote farming districts. But this apiary was not chaotic on account of neglect nor of a lack of knowledge. It represented skill of the highest type. Mr. Vanderwerken has silenced Mr. Hutchinson's slogan. Mr. Hutchinson advocated, "Keep more bees." Mr. Vanderwerken says, "Take better care of those you have. Keep them warm and they will work." Within this conglomeration of packing boxes and old bedquilts were the best and finest ten-frame dovetail hives. Mr. Vanderwerken uses the boxes merely as an outer shell within which he puts strips of waste paper secured from a local printing-house. Some of the hives were packed with leaves, but most of them had the paper trimmings which, he assured me, are better than leaves. Many of the hives have three or even four stories, making as high as forty frames, and every frame is loaded to its utmost capacity with pure honey. The twenty-two colonies in his apiary are unquestionably in a finer condition than those in any other that I have ever visited. Although it was a warm day in the first week of September, he was applying the carpets and bedquilts and tar-paper roofings, and various other forms of protection, as liberally as one might expect to see with the thermometer below zero. My pupil has taught me what most of us are slow to learn—that, if we keep the bees warm for the whole twenty-four hours, they will work for twenty-four hours.

In his apiary there is no desertion of super or upper story on cold nights; the bees keep hustling every minute. Then, too, this efficient beekeeper has learned the secret of the survival of the fittest. Only the very best queens are tolerated in his apiary. He has rejected and selected until there he has obtained the highest efficiency in bee work. The combs were beautifully clean, and in perfect condition; and, best of all, the bees were working.

Mr. Vanderwerken takes care of his bees. He has a strong affection for them, and he has so experimented, so gleaned from the experiences of others, and withal put so much thought and labor into his apiary, that I award it the first premium, notwithstanding its somewhat ragged and unattractive appearance. I am glad to acknowledge that my unexpected pupil has become one of the most efficient teachers in the art of honey-producing, and in enthusiastic admiration for the wonderful *Apis mellifica.*

Arcadia, Sound Beach, Ct.

[The two illustrations shown herewith, and the cover picture for this issue, serve to finish the introduction of Mr. Vanderwerken, and to prepare the way for his article which follows.—Ed.]

BEEKEEPING IN CONNECTICUT

Honey from Clover of the First Year's Growth

BY E. VANDERWERKEN

Our season just past proved a good one. Goldenrod did not yield as well as it has in some years; but the clover yield was the best we have had for some time. Some have declared that the first year's growth of white clover does not yield nectar. Now, we have had absolutely no clover for two years, and yet this year it yielded the best in a long time. Mr. Coley, who is the most extensive producer in the State, having 350 colonies, says that the clover yield was the best he has seen for years.

Mr. Allen Latham's specialty is sumac, as there are great fields of it around him. This, however, did not yield in our locality as well as usual this year, and I think Mr. Latham says the same of his locality.

I have not done any extracting yet, as I want to get all the aster honey I can away from the bees, as it has not proven to be the best winter food. My colonies are in fine condition. I have twenty-two in the home yard, and six outside. Mr. Bigelow says he can not see how I get such strong colonies. I had one swarm which came out this season which I am afraid I can not get into a ten-frame hive.

For winter I use the sealed super cover or pasteboard over the hive, and over this I put a case packed with dry leaves or thin shavings of paper, which I get at a publishing house for 60 cts. a bale. I leave the entrances wide open. Some make the mistake of closing the entrances, and the hives get cold and damp, and there is too much mold. I have never lost a colony by my method; but sometimes one will show an unusual death rate. When this is the case I wait for a warm day, open the hive, take out three or four combs of honey, and replace it with combs of syrup made as thick as honey in the same number of combs. If the hive is damp I change the combs of bees to a dry one and pack

them again. I have never lost one after such treatment, in spite of the fact that I have been told that, after a colony gets started in this way, it is apt to die before spring. But the bees always show a marked improvement after the change of stores, and come through all right.

A BEE DISEASE RESEMBLING NOSEMA APIS.

A strange disease has appeared among the bees in this State. Sometimes it is accompanied by bee dysentery, but not always. Mr. Coley has had three cases, and has reported others that he saw during his work as foul-brood inspector. He says his own affected colonies died. I had one case, but I did not lose it, as I requeened, and the bees seemed to outgrow the trouble. The bees come out on the alighting-board, surround one bee that seems to be affected, and act as though they wanted to pull it to pieces. The one attacked makes no resistance, even though there may be four or five bees around it. After a time, when it would seem as though the one bee would be nearly killed, the others will stop mauling it about, and it will fly away as though nothing were the matter. Very often the healthy bees will pull out the sick ones and roll them off the alighting-board on to the ground, so that the ground is covered with them. In the one case I had, the queen was a fine-looking one and a good layer. I kept close watch all summer; and, though they have not built up well or stored much honey, I think they will pull through the winter if the trouble does not break out again. If it does, I shall brimstone the bees. We sent a number of the affected bees to Dr. Phillips, and he reported that he could not tell what the trouble was. I have read some of Dr. Zander's articles on *Nosema apis*, and I am of the opinion that *that* is the trouble. I have found traces of it among some of my strong colonies.

If this scourge should become epidemic, foul brood would be in the background so far as loss is concerned. We have foul brood all around us, which is quite enough without any new trouble.

Stamford, Ct.

THE FACTS ABOUT BEEKEEPING IN CENTRAL FLORIDA

BY DR. L. A. SIMMON.

Beekeeping in Florida was written up last year by Mr. E. G. Baldwin; but he wrote of localities where commercial beekeeping is a possibility, and of men who have devoted years to the business, and are princes in the art. It was inspiring to read his articles, and especially concerning the tupelo belt, where "shiploads of honey go to waste for want of bees to gather it." It should be known, however, that a large area of the State is deprived of the conditions that make beekeeping on a large scale a profitable occupation. That portion of the State known as the "High Land Lake Region," high pine land, and the "Flat Woods" adjoining, produce but few of the honey-bearing plants and trees, and none of those found along the rivers and coast.

The promiscuous summer and fall flowers that grow in great profusion over the wooded lands afford but little honey, but furnish an abundance of pollen. Orange bloom is the chief source of surplus honey. The trees bloom some years as early as February. Last year they did not bloom until in March and April. In order to secure a good crop of orange honey it is necessary to feed the bees in January to stimulate early breeding and have strong colonies when the trees bloom. Orange bloom lasts about two weeks, and, occasionally, is drawn out to three. Gallberry and saw palmetto succeed orange bloom; and if it were not for the fact that the cattle men burn the woods over once a year they would afford considerable honey of a light-amber color and good flavor. But the plants have been so crippled and killed out that this source furnishes barely enough to carry the bees over the summer months. It is my practice to extract the orange honey at the end of the flow. It is then capped over, and ripe. I allow the bees to keep all the honey from all other sources. As a result I have to commence feeding my bees in August, and feed them more or less all fall and winter. Without a knowledge of the impending dearth that begins with the rainy season, which usually sets in about the first of June or July, the bees continue their high-pressure brood-raising during the secretion of gallberry and palmetto honey, which consumes this stock of stores. When it rains every day for two or three weeks, and they begin to discover their predicament, out of honey and none to be found, they begin to retrench by carrying out their larvæ, destroying all eggs, and in every way possible conserving their limited resources. It is *before* this occurs that the vigilant beekeeper must come to their aid. If not, they soon begin to dwindle, and a weak colony of old bees is hard to rejuvenate, and of little value.

Owing to the fact that bees can fly almost every day in the winter months, the

mortality here in the South is much greater than at the North, where they semi-hibernate. As a result, more or less brood-raising is continued all winter provided the bees are furnished the necessary food. Bee-keeping in this part of Florida is a rather difficult problem to the beginner and to most of the native people. As a result, but few bees are kept in a modern way, and those that are kept in "gums" and box hives succumb to the moth-worms and ants in due time. Fortunately we have no foul brood now; and, notwithstanding the fact that bees require feeding a long time if any honey is secured, yet it will pay every owner of an orange-grove to keep a few colonies of bees, and properly care for them, in order to secure the perfect pollination and fertilization of his bloom. The added increase of fruit will more than pay for all the sugar, time, and trouble expended.

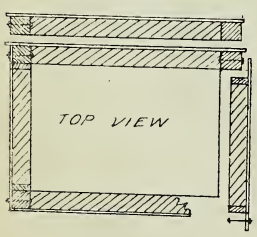
Auburndale, Fla.

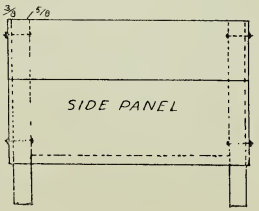
A WINTER CASE FOR ONE COLONY, WHICH MAY BE TAKEN APART

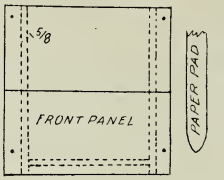
BY H. FISBECK

Having read the different methods for packing bees for winter in the Sept. 1st issue, I feel as though I should like to give my method in the past and for the future.

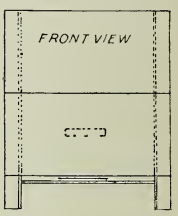
After taking out the two outside frames of honey I see that the remaining eight L. frames contain at least 25 pounds. The empty spaces are filled with pads of newspapers (the outside sheet being a sheet of oiled craft paper) tightly squeezed in. These pads rest on small sticks on the bottom-board, allowing any water that might accumulate to run under. A ⅜-inch board, the same dimensions as the inside of the hive, separates the paper from the combs. A tin spacer is nailed on the bottom of each end of the boards to keep them straight in the hive. I then put on a bee-escape board, leaving out the Porter bee-escape for upward ventilation. When brood-rearing starts I close up this hole. Closing up this hole in spring, I believe, is a means of supplying bees with water, for it condenses more readily in a sealed hive.

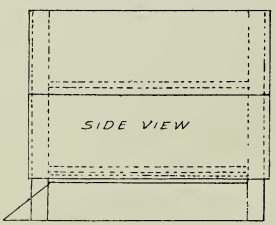






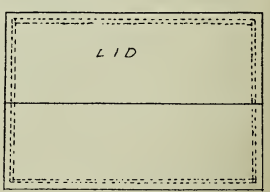
I then place over the hive the winter case, of which I enclose the plans. The case is first bolted (not tight) and set down over the hive. The paper pads like those described before are set down in between the hive and case. The reason I like these pads is because, when spring arrives, there is not a muss made in taking out the packing. Any way, I am a firm believer in paper for keeping in the heat. On top of the cover I put on a cushion of shavings a foot deep. I then put on the winter-case lid which has a sheet of rubberoid laid on, lapping over. Then a strip of tar paper is wrapped around the four sides of the case, being lapped in the front. The ends of the bolts are forced through the paper, and the washers and nuts tightened. This tightening makes the packing one solid mass of paper. I then push in a row of thumb-tacks around the top and bottom of the tar paper.





The paper pads are made by folding an ordinary newspaper in half and placing one paper inside another, etc. That necessitates making each inside paper smaller than the one it is placed in. They are 1½ and 1¾ inches thick. These pads are saved for the next winter, etc.

The principal advantage of this case is its cheapness, and its being easily stored away in the summer. This case is large enough in this latitude. My smallest colony wintered perfectly through the last very severe season. Colonies can be easily in-



spected by lifting off the lid and taking out the cushion of shavings and hive cover.

St. Louis, Mo.

A LOW TEMPERATURE IN BEE-CELLARS

Not Much Harm Done if Air is very Dry

BY ELMER HUTCHINSON

On page 648, Oct. 15, the editor takes exceptions to my statement that bees can be safely wintered in a cellar with a long-continued temperature as low as 34 degrees. I know that is the generally accepted opinion. Mr. James Heddon once wrote that cold in a cellar is a giant. But I added several provisos; first, there must be strong colonies of healthy bees; second, they must be well supplied with good stores; and right here is where I believe a good many fall down in wintering bees. They don't make sure that the colonies have stores enough. Where the bees are short they seemingly consume more than if they had plenty; and that very fact has a tendency to keep them uneasy. Then if the combs have at least 40 lbs. of good honey or thick sugar syrup in them they get warmed through by the bees, and are a big help in keeping an even temperature inside the hive. I may say here that I have fed more than 5000 lbs. of sugar this fall to put my bees in that desirable condition for winter.

Like Dr. C. C. Miller, I believe one of the main essentials is pure air, and plenty of it. I have always noticed that, when the air gets foul in a bee-cellar, although all the other conditions may be perfect, the bees invariably become uneasy and begin to roar. The cellar I wintered those bees in last winter was an old one that had not been used for several winters, and was somewhat out of repair, so that there was plenty of fresh air. That was one reason it was so cold. I had intended to fix it up a little after the bees were in; but they seemed to be wintering so well that I let it go as an experiment. The thermometer was a tested instrument, so there could be no question about its being right.

Now, don't think that I advise every one to let the temperature of the bee-cellar drop to 34 and stay there; for in the majority of cases I know that it would make trouble. There would be some necessary condition lacking that would probably result in the loss of the most of the bees. I know that, when I lived further south in the State, I never could let the temperature go below 40 degrees without having the bees begin to roar; and if the cellar was not warmed up at once there was a big loss of bees before spring. I suspect that what causes the difference is the dryness of our air here. In this locality I can be out of doors when the temperature is 20 below zero, and my body never gets cold; and I never wear an overcoat unless I am driving. When I go back to the southern part of the State in the winter, even with a heavy overcoat, I can be out of doors but a short time before I am chilled through and my teeth chatter, even if it is only a few degrees below freezing. It is all caused by the dampness of the air there, and I think that is one reason why the bees can stand more cold here in the cellar than they can further south. Therefore if the temperature in the bee-cellar is lower than 40 degrees the air *must* be very dry.

Pioneer, Mich.

LIME OVER A BROOD CHAMBER IN WINTER

Its Use Advised Back in 1880

BY ARTHUR C. MILLER

In GLEANINGS for December 1, 1880, p. 579, is an article headed "A New Idea in Wintering." It is almost or quite worth reprinting. It fits in with an article in the Sept. 1st issue. It is interesting in suggesting fused calcium chloride—a material since used for the purpose by Mr. Latham and others.

[The following is the article referred to:—ED.]

A NEW IDEA IN WINTERING.

This will be a hard winter on bees in most parts of the country, on account of lack of good stores, and mostly old bees—a poor prospect certainly. We must help the little fellows, or make up our mind to lose them. Last winter I kept ten stocks warm, dry and in good health by chemical means; *i. e.*, by generous use of quicklime. My other stocks had the dysentery, and every one of the chaff hives was mildewed and wet, in spite of three dryings during the winter; while the ten cushions used on the hives with lime were as dry and clean as when first made. No one will believe the amount of water quicklime takes up by chemical affinity unless he try the experiment for himself; therefore, take about one quart of it in a basin, and ½ pint of water, which pour slowly on the lime, stirring well all the time during the slaking; and if the lime was properly made you will have a perfectly dry powder, still capable of absorbing more water before becoming damp. The action of the lime is threefold:

1. It absorbs moisture;
2. It absorbs carbon dioxide (carbonic acid),
3. It gives out a large amount of heat.

This it does slowly, and in exact proportion as it absorbs the breath of the bees; *i. e.*, much moisture, rapid chemical action, much heat. What is still more strange, this is dry heat, not moist.

This absorbing action is so slow, and the amount of heat so small that nothing but scientific instruments (hygrometer and thermometer) and *the bees* can appreciate the meaning of a *constant, mild, dry, pure atmosphere.* What is the use of making the bees use up their honey, worth 15 cts. per lb., to develop the requisite heat to keep themselves alive, when it can be done with lime, worth less than one cent per pound, and which is almost as valuable *after* this slaking as before? Don't believe me when I say not one of the ten hives above mentioned

used over 15 lbs. of honey (all they had) in wintering out of doors, even if it was a mild winter, for I can hardly realize it myself, even when I see the figures in my yard-book now before me.

When you try the experiment of slaking the lime, notice the heat development, but not with your finger (unless for a cartoon). I used the lime in a feeder *a la* Van Deusen, made flat, and laid broadside next the bees under a cushion. This was troublesome, requiring frequent refilling. I will use, this winter, on my weak stocks, a box made like your chaff-cushion division-board, and to hold about half a peck of lime.

Chloride of calcium (calcined) will absorb much more water than lime, and I expect much from it for these same purposes; but it will have to be contained in a water-proof vessel, as it is one of the most deliquescent substances I know of. Absence of actual experiments is the only reason that prevents me from recommending this substance to the careful beekeeper, although I am certain it would be a success. C. LOVER.

Reisterstown, Md., Oct. 18, 1880.

[In case of a weak colony with stores of poor quality, we can see that the lime might be of advantage in preventing dysentery. Or it might prove beneficial in any instance where conditions are so unfavorable as to cause dysentery. When all conditions are favorable we do not believe that the lime would pay for itself, for the amount of heat generated would be so infinitesimal at any given time that it would have no practical value.—ED.]

BEES WORK ON DEAD-RIPE MUSHY BERRIES ONLY

BY WILLIAM BELSHAW

There is some question as to whether bees will trouble berries, p. 540, Sept. 1. I can safely say they will suck the ripe juices from blackberries. I purposely went to my blackberry patch, and saw them busy doing it. But what if they do? There are berries there enough and to spare—bushes just loaded down with berries in all stages; some just formed, and others in all shades of green, red, and black. Among the black alone there are the solid black such as would do for long shipment and for jelly; others a little riper that would do for immediate sale for making sauce and for canning; and some mushy-ripe ones that burst in the fingers while picking, and that are, consequently, useless. Now, the bees work on these mushy-ripe ones. They do not interfere with any of the others, therefore they are taking fruit that is beyond value for food.

This work of the bees is welcome; for since they take the berries on the verge of decay, they save to some extent the rest of the berries from contamination of the germs of decay. For my part I prefer to let the bees remove the dead-ripe fruit that has passed beyond the point of usefulness.

Snohomish, Wash.

FURTHER NOTES ON HOW THE CORBICULA, OR POLLEN-BASKET, IS LOADED WITH POLLEN

BY F. W. L. SLADEN, F. E. S.

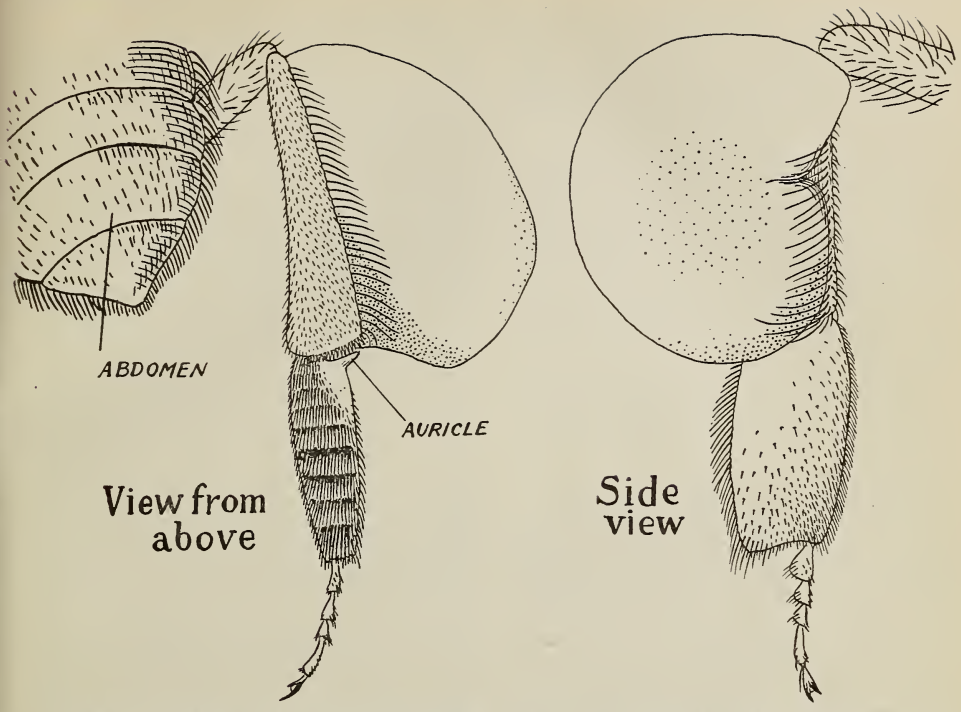
On page 172,* March 15, the writer advanced the theory that the pollen is loaded in the corbicula, or pollen-basket, situated on the outer side of the tibia of the hind leg of the worker honeybee, and of the queen and worker bumblebee, by being combed into a receiver situated on the end of the tibia and then forced up into the corbicula by a projection at the base of the metatarsus called the auricle. Three reasons for the support of the theory were given: first, the structure of the parts; second, an experiment made with a dead queen bumblebee's leg in which the auricle was made to force pollen into the corbicula artificially; third, the rubbing-together, exclusively in a longitudinal direction, of the hind metatarsi, observed in a worker honeybee collecting pollen from *Eranthis hiemalis*.

Since that article was written the flowers have opened and have offered many opportunities for investigating pollen-collecting.

On a fine morning, some weeks ago, I stopped the entrance of one of my hives with grass, and in a few minutes about a hundred pollen-laden bees had gathered there. Among them were two or three whose loads consisted of pollen of two colors. These I caught and dropped into my killing-bottle.

Going to other hives, I soon secured many bees with parti-colored loads. A careful examination of these indoors not only confirmed the above theory but showed exactly how the pellet of pollen grows. The accompanying drawing shows the loaded right leg of one of the bees that were caught. The pellet consisted of white pollen, with the exception of a small quantity of orange pollen, evidently added afterward, for the metatarsal brushes contained orange grains. The orange pollen had been forced in as a wedge between the white pollen and the corbicula, the wedge having been driven in at the corner of the corbicula that comes into contact with the auricle. The new pollen could not have gotten into the corbicula by being scraped on the upper edge of the corbicula, as Cheshire supposed, nor could it have been plastered on to the pellet with the metatarsus of the middle leg, which is the way that propolis is loaded in the corbicula (see my article, page 335, June 1), for the or-

* See also my article in the *British Bee Journal*, Dec. 14, 1911.



Right hind leg of worker bee laden with pollen of two colors, white and orange. The close dots indicate the orange color, and the remote dots pale orange color; the clear portions are white.

ange pollen was situated where no outward application could place it. The repeated forcing-up of the pollen by the auricle into the corbicula often causes the pellet to buckle about the middle, as shown in the drawing. Notice, too, the tinge of orange —rather dingy, and only skin deep—on the outer side of the pellet. This, I believe, is the footmark of the metatarsus of the middle leg, which is used to pat down and to shape the pellet as it rises and swells (see page 336, June 1). One can now understand the function of the fringe of stiff hairs around the pollen—the so-called basket-hairs. They guide and shape the swelling mass. Those on the upper edge of the tibia stand up straight and allow the pollen here to rise straight up too. But the hairs on the lower edge curve outward and upward, and they make the swelling lump of pollen do the same.

It is interesting to note that the teeth of the comb situated on the end of the tibia (see illustration, page 173, March 15), that are used to comb the pollen out of the metatarsal brush (of the opposite leg) have their tips about the same distance apart as most of the bristles in the metatarsal brush, namely, about 1-25 of a millimeter.

A suitable name for the receiver for pollen at the end of the tibia is the *excipula* (Latin, receptacle); and for the entrance to the corbicula, the *limen* (Latin, threshold).

The clothing on the *limen,* the function of which is evidently to form a surface for the first contributions of pollen to cling to, varies in different species of bees, and makes an interesting study. In most species of bumblebees the *limen* bears a dense coat of moss-like fluff, beyond which stand about three long stout hairs widely separated from one another; but in some species, notably *Bombus violaceus,* a native of Brazil, the fluff is bordered on the inside with fine hairs; and in *B. confusus,* a central-European species, the fluff is very long and dense, and the long stout hairs are usually reduced to one stunted example. In the honeybee the *limen* looks bare when viewed from above; but if it is viewed endwise, and suitably illuminated, it will be found to be clothed with fine fairly long fluff.

Some way, inside the entrance to the corbicula, near its upper margin, there is a single long hair (not shown in the drawing on page 173). I have examined several specimens, and have found this hair present on each of them.

Ripple Court, Dover, Eng.

Beekeeping in the Southwest—Continued from page 720

of them are shipped by the producers to hundreds of towns and smaller cities, I saw no real reason why these same packages should not be handled by the large city grocers.

The packages referred to and adopted as standard in Texas for both bulk comb and extracted honey are the two 60-lb. square cans to a case; ten 12-pound friction pails to a case; ten 6-pound and twenty 3-pound friction-top pails to the case. Many carloads of these are used annually—the ten 12-pound and ten 6-pound sizes being the most popular.

My investigations revealed, however, that the richer class of people of the city do not pay so much attention to the matter of cheapness in buying as to the appearance of the article.

GLASS PACKAGES FOR THE FANCY TRADE.

I found, therefore, that glass bottles and jars please these well-to-do people. I further ascertained that it is almost impossible for these stores to sell a larger package of honey than a 50-cent size, and that a 30 or 35 cent size is the best seller. My own observation and experience in disposing of honey at fairs has revealed this same thing. It is true that some persons will buy larger packages at a fair; but it must be remembered that, as a usual thing, these purchasers are not of the better-to-do class.

TIN PACKAGES FOR THE MASSES.

As soon as we leave the strictly fancy city-trade grocers we find those who have the average-to-do persons for their customers. In these stores it is no trick to sell a larger package at a time, provided it is cheap enough. The most economical package then is the tin pail. But even in case of these, only the smaller sizes, 3 and 6 pound pails, are in most demand. In the general stores, however, on the very outskirts of the large city, or in the general-merchandise stores of all the smaller cities and towns, the larger packages are most in demand. Here the country trade predominates, and the well-to-farmer purchases his honey in the 12-pound or gallon pail, just as he buys his dollar's worth of sugar and coffee. These stores are the ones which usually prefer to order direct from the producer in case lots, thereby saving the middleman's profits.

WHERE THE 60-LB. CANS COME IN.

It is in these stores, also, that much honey is still sold out by weight from the large square 60-lb. cans, the purchaser usually furnishing the vessel. Of course many 60-pound cans are also bought by a single family. These purchases are rather few as compared to the 12 and 6 pound-package sales.

It might be well to state that the 60-pound can is not as popular as it used to be, especially for bulk comb honey. This is according to my experience at least. It may have been brought about by the fact, however, that we have made the 12 and 20 pound pails more of a specialty. At the same time, though we quote the prices of each kind in our lists, yet the orders received show a decided favor for the above-mentioned pails.

From the beekeeper's standpoint there is an advantage in furnishing these sizes over the 60-pound cans. While the pails cost a little more per case, it does not require as much comb honey for packing them. As the comb honey is the most expensive part of the contents, this is an item of importance. It must not be forgotten, either, that the price for the 12-pound pails, by the case, is ½ cent per pound more than the 60-pound cans, and 1 cent more for the 6-pound pails. On a large crop, amounting to several hundred cases, the extra profit amounts to a good many dollars. It is enough to be worth considering by the beekeeper. I investigated this especially, since a number of beekeepers have argued this point, favoring the 60-pound cans rather than smaller sizes.

THE SUMMING-UP.

The conclusion derived is that one must study his markets closely; for that which sells in one place very readily may not in another. As a result of my investigation I find that I must furnish my choice product in fancy glass to the city fancy retail grocer, while the market for the more economical package is found in the suburban stores and those of the smaller cities and towns. The wealthy farmer is the best customer for a larger quantity at a more moderate price. And here is one point in this connection which I wish every beekeeper would think about more seriously. That is, to make a greater effort for a more general and wider distribution of honey. Instead of glutting the large cities, it is of the utmost importance to fill the wants of the general masses who are to be found nearer the towns and country places, and on the farms where no bees are kept.

I do not wish to be understood as being against furnishing the city markets with their share of honey; but I do raise an objection against the too common practice of looking toward these markets and neglecting the market nearer home.

Heads of Grain from Different Fields

Are Redwood Hives More Immune to Bee Disease than Hives of Pine?

An extensive beekeeper of Saltriver Valley uses redwood exclusively for the hives in all of his apiaries. He buys a great many colonies of bees throughout the valley, but they must be in hives made of redwood or he passes them by.

This man claimed bees are free from diseases when occupying the redwood hive.

If I am not mistaken, the redwood is a species of cedar or fir family; and I guess the most of us know what a panic the oil of cedar creates among insects when applied to them, that bother us in our houses. My bees are mostly in the redwood hive, unpainted. The oil in the paint destroys the effect of the oil of cedar in the redwood lumber. Bees could not be healthier than mine are.

Phœnix, Ariz., Oct. 25. L. M. Brown.

[Some years ago we traveled extensively through the redwood districts, or, rather, where the redwood hives were used, and our recollection is that foul brood was just as common in hives made of that as of pine or any other material. While cedar chests are supposed to keep out moths that will eat into fur or woollen goods, it should be understood that the moths themselves are very different in general characteristics from the microbes that cause foul brood, both American and European. Your friend, the extensive beekeeper, must be entirely mistaken in believing that redwood has any thing to do with keeping out the bacteria of bee diseases. If there were any thing in his idea, the Bureau of Entomology would have known it long ago.—Ed.]

A Swarm Hangs on a Limb Nearly Two Months without Building Comb

On September 11, six weeks ago to-day, some boys called my attention to a swarm of bees clustered on the limb of a large white-oak tree, about fifty feet from the ground. As the tree stands in front of my house it has been easy to watch them. The swarm was a large one. No one is positive when the bees settled there, although workmen in the fields near my house say that they saw a swarm pass and go into the grove the last of July, and they tried to find them but failed. To my knowledge this swarm has been there six weeks, and for the past four weeks it has been gradually growing smaller, due to clumps of bees dropping off to the ground from weakness, particularly on cool mornings, until this morning the cluster was not larger than a man's fist. Since I first noticed the cluster it has moved gradually about six feet further out on the limb. Is it not very unusual for a swarm to hang like this until the bees starve?

Later.—The last of the swarm dropped from the limb on the 20th or 21st of this month, and all died on the ground beneath the limb. There was no comb built anywhere on the limb.

Blackstone, Va., Oct. 16. N. S. Mayo.

[It is unusual that a swarm should hang on a limb so long in the open without making at least some attempt to build comb. There have been reports of outdoor colonies; but in every instance that we have known, the bees have built combs on the limb and made an attempt at establishing conditions as nearly as possible resembling those inside of a hive; but even such outdooor colonies usually dwindle away to almost nothing at the approach of cold weather.—Ed.]

Are Carniolans Prone to Supersede their Queen?

In one of Dr. Miller's Straws, page 612, Oct. 1, he quotes Editor Gerstung as saying that bees generally supersede their queens during the spring. Are these bees Carniolans? My experience with these bees is that they are invariably well ahead in numbers in the spring, and during fruit-bloom supersede, swarming with the first-hatched queen. I have had this happen several times, and with three different strains of bees. I attribute this to the exceedingly rapid way these bees build up, the queens being worn out early. Or is it due to their being naturally short-lived? I am inclined to think that the excessive swarming experienced is due to this superseding. In this country they have the reputation of being excessive brood-rearers—that is to say, they keep on rearing brood in quantity, right through the honey-flow, using up the greater part of the income. Their crosses, particularly with blacks, are invariably vicious, and on these counts I have decided to clear them out.

I am unable to understand how it is that, with you, blacks have such a bad name. Probably they are not quite the same variety as ours. I am convinced that, taking one season with another, blacks of a good strain are the best for us, and particularly is this so when sections are run for. I am free to admit that some Italians I have had are first rate, for extracted. I shall be glad to hear whether your experience with Carniolans coincides with mine.

H. H. Brook.

13 Westgate Hall, Altrinchan, England, Oct. 12.

[Your experience with Carniolans is very much the same as ours. They are excessive swarmers, in season and out of season; and since you mention it, part of this excess of swarming may be due to the tendency of the bees to supersede their queens. As you say, they are heavy breeders in the spring, and they breed heavily when the honey-flow is on. Naturally enough, this would tend to cause supersedure a little earlier than it would with the Italians.

We would be pleased to get reports from those who have tried Carniolans pretty extensively; because the more thoroughly we understand their peculiar habits, the better able we shall be to hold in check some of these undesirable tendencies.

With regard to black bees, from reports we have received we are convinced that the English strain of these bees is much superior to those in America. —Ed.]

A Protest Against Mending Broken Comb Honey with Paraffine

I note the reference to the plan of mending the cappings with warm paraffine, p. 617, Oct. 1. After looking in vain for a footnote or comment on the above article, I can not but believe that the sin of omission is as great as if not greater than the one of commission. One of the worst of the comb-honey canards is the general belief by the public that paraffine is mixed with honey, or, rather, is manufactured into comb, and I am surprised that you would permit any one to advocate daubing up comb honey with it, without a word of caution on your part.

Dewey, Okla. M. H. Hill.

[The amount of paraffine used would be so very small that there certainly could be no objection to it, providing one could afford to give the time to patch up here and there a broken cell. Moreover, paraffine melts at a lower temperature than beeswax, and this one fact would make it possible to make repairs with it when it would not be practicable to use bleached beeswax. Hot beeswax applied to the cappings of ordinary comb would, of course, melt the other beeswax with which it comes in contact; whereas a hot paraffine, relatively somewhat cooler, would not affect the beeswax.

While we most strenuously object to making foundation out of paraffine or using it in any large way in the bee business we can not see that there is any objection to its use in the manner related by our correspondent on page 617, Oct. 1. As a matter of fact, it will be impracticable to use paraffine to make repairs on comb, for the simple reason that the time consumed in applying it would more than offset any possible increase in price that the section would receive from the repair. We do not think our correspondent needs to worry over the thing, for the process can never be a commercial possibility.—Ed.]

New State Beekeepers' Organization of Massachusetts

On September 14, at the State Mutual Restaurant, Worcester, Mass., Mr. J. B. Levens, of Malden; O. F. Fuller, Blackstone; J. L. Byard, Marlboro; A. A. Byard, West Chesterfield, N. H.; Arthur Monroe, Spencer; and Dr. B. N. Gates, of Amherst, met at an informal dinner for the purpose of discussing the advisability and method of forming a State beekeepers' association for Massachusetts. The invitation to this meeting was extended by Dr. Burton N. Gates, of the Massachusetts Agricultural

College, acting as Secretary of the Hampshire, Hampden, and Franklin Beekeepers' Association, who voted last spring to further the organization of a State society in which there should be representation and co-ordination of the various local societies of the State.

The sense of those present in Worcester was so unanimously in favor of the movement that it was voted to form an association to be known as the State Beekeepers' Association of Massachusetts. Provisional officers were elected by unanimous vote as follows: President, John L. Byard; Vice-president, J. B. Levens; Secretary-treasurer, Burton N. Gates.

The constitution and by-laws were discussed, a memorandum drawn up and authorized, and submitted to a committee composed of presidents and others of the several societies now existing. It was further voted to hold the first annual meeting of the organization on the second Saturday in January, 1913, as a joint meeting with the Worcester County Beekepers' Association, in Worcester. It was furthermore voted to announce this organization through the courtesy of GLEANINGS.

Briefly, the organization is designed as a medium of union and co-ordination of the various loyal societies in Massachusetts for the purpose of devising and promoting measures that are of general interest to the beekeepers of the State, and to encourage the organization of local co-operation in the several districts of the State, as well as to promote and impress upon the public the importance and value of the beekeeping industry.

Since this organization is distinctly in the interest of individual beekeepers of the State, the Secretary solicits your suggestions, and will gladly correspond with those interested. BURTON N. GATES.

Amherst, Mass., September 25.

Lining the Wire Cloth of Queen-cages

Some time ago I wrote suggesting that the wire netting on the queen-cages be covered so that the bees might not come in contact with it. The reason for my suggestion was this: I found that, if one cage of bees arrived dead, the whole lot were dead, and *vice versa*. I argued that the same hand that put in one cage put in all, and all in the same position. Whatever position one assumed they all assumed. I found that, if a lot came alive, they came in fine order. It seemed to me probable that this difference depended on whether the wire netting formed the floor or the roof on the voyage. If the former it became coated with bee food, and the rust in turn killed the bees in their cleaning-up. The last lot you sent me came in excellent order—all five—and I observed you had adopted my suggestion, and covered the wire. It is the suggestion of ignorance again. I may mention that the exit hole and three tiny holes in the side were all the ventilation the bees had. Under an adverse situation would this suffice? The bees had just begun to eat down the cover of wire, but this was quite fresh. Every cage had about half of one side eaten away.

When removing a super of honey I found a single queen cell sealed with royal jelly and live larvæ. There was not a single egg nor larva otherwise. The queen-excluder was in good order, and the queen was in the brood-chamber. In this island bees seem to yearn for the presence of a queen above, and will readily raise queens there. I think this is convincing proof that bees will transfer eggs.

W. G. HUTCHINSON.

St. Joseph Rectory, Barbadoes, Oct. 7.

[We can see no reason why wire cloth, whether it be next to the little bunch of bees in a mailing cage, or protected, so it does not come in contact with them, would have any effect one way or the other. The very fact that you notice that, whenever the bees in one cage are all right, the bees in the other cages are also, points strongly to another cause for the death of the bees and queens. Sometimes the contents of mail-sacks are fumigated to prevent the spread of disease to human beings. If there are packages of bees in those sacks this fumigation, of course, kills the occupants of *all* the cages alike. We think, therefore, it is safe to conclude that, whenever the bees in *all* the cages are dead, the cause is not due to the wire cloth, construction of the cage, nor to the food, but to the fumigation. If, however, one or two cages of bees are alive, and the rest dead, the cause is, clearly enough, not fumigation, but some other condition. We can not, therefore, believe that black wire cloth, such as is always used in queen-cages, could have any effect one way or the other. There is no reason why it should. But *green* wire cloth, on account of the arsenic in the paint, might do harm.—ED.]

Do Carniolans Resist European Foul Brood More Readily than Italians?

I should like very much to learn to what extent Carniolans resist European foul brood. What has been the experience of those who have had an opportunity to compare their resistive qualities with those of the Italians? An acquaintance of mine, Mr. E. Baker, of Los Angeles, has tried Carniolans, he says, for two seasons, side by side with golden and leather-colored Italians, and in his opinion the Carniolans are twice as resistant to European foul brood as are the Italians. He spoke of a number of instances where he introduced Carniolan queens into Italian colonies that were badly affected with the disease, and in every case they effected a permanent cure. At least he says the disease has thus far failed to reappear.

Now, this is a subject upon which too much light can not be shed. It is the commonly accepted belief that Italians are the most resistant race of bees to European foul brood; but let's hear what those who have tried both races have to say.

Artesia, Cal., Oct. 9. H. PERKINS.

[One or two reports have shown that Carniolans, like some strains of Italians, seem to be much better able to resist European foul brood than ordinary black bees. Other reports indicate they are no better. Reports so far received seem to show that a good strain of Italians will resist European foul brood much better than any of the black races.

We ourselves have had no opportunity to make any observations along this line. Let us hear from those who have had personal experience with both races during a siege of disease.—ED.]

Dipping Queens in Water in Order to Clip the Wings More Easily

I have had some little difficulty in clipping queens, although I have tried several different kinds of tools. Mr. Y. Susuki, of Wakayama, told me of the following plan: He puts the queen into a cup of water so that she will spread her wings in the attempt to fly, in which position they may be easily clipped with scissors. MASAMI YOSHINURA.

Shimomakuwa Mura, Motosugum, Gifuken, Japan.

[While we have not tried the plan of putting the queen into water, we feel sure that the plan recommended in the A B C and X Y Z of Bee Culture is better, for there is no danger at all if the queen is held in the manner described, the wings naturally lying in such a position that they are easily clipped without danger of clipping a leg, or injuring her otherwise. The best way is to practice on drones until one has no trouble in clipping the wings quickly. The task is then a very easy one.—ED.]

Sections of Dark Honey for Winter Stores

Relative to the article, "The Wintering Problem," p. 630, Oct. 1, perhaps my way of preparing bees would be of some interest or benefit to those who winter on summer stands in Danzenbaker hives. I take out of the supers all inside fixtures and lay on the brood-frames 11 sections of dark honey, as I usually have a flow of dark honey in the fall. Over this I spread a burlap sack, and put on the cover. I have not lost a colony out of fifty since 1908. J. A. KREIGHBAUM.

Hartville, Ohio, October 15.

Death of W. A. McPhail

W. A. McPhail departed this life Sept. 30, 1912, in his 81st year. He had been a subscriber to GLEANINGS since 1877. He started beekeeping in Atascosa in 1878, and closed out his business in 1905 on account of failing health. He was one of the pioneer beekeepers of Atascosa County, and owned 200 colonies at one time. His largest crop was 14,000 lbs. of extracted honey.

Floresville, Tex. MRS. W. A. MCPHAIL.

Our Homes

A. I. ROOT

Her ways are ways of pleasantness, and all her paths are peace.—PROV. 3:17.

The house of the strange woman is the way to hell, going down to the chambers of death.—PROV. 7:27.

Dear friends, you may be surprised to see the beautiful text at the head of this talk linked together, as it were, with the one just below it; and, in fact, I have placed them side by side purposely in order that both of them may shine out by the strong contrast. *Wisdom's* "ways" are contrasted with the ways of wickedness and sin. It is like the whiteness of snow when it is in contact with the blackness of soot. My talk is to be mainly under the head of the second text—life and death contrasted—spiritual life and spiritual death. Below is a clipping from the Cleveland *Plain Dealer*. Read it:

Cleveland morally is better off than it has been for ten years, police announced last night.

This is the result of the most energetic "clean-up" that police in that time have conducted of so-called grill rooms, doubtful rooming houses, questionable dance halls, and other places in what was referred to in the Baptist vice report as the "flat district."

Lieut. Thomas Martinec, placed by Chief Kohler in charge of a special vice squad of thirty-five plain-clothes men about two months ago, when the crusade was taken up, yesterday said more than 500 undesirable men and women, *mostly women*, have been sent out of town in that period.

Hundreds of girls, young women, and men nightly have been taken unceremoniously out of so-called grill rooms, rooming houses, and various other places by the special vice detail, placed in patrol wagons, and taken before Lieut. Martinec. Their names and addresses have been taken, and they have been either "golden ruled" and warned not to be caught again, or ordered out of the city.

"We have seen that every one of the 500 and more ordered out of town actually did go," declared Lieut. Martinec. "In every single case a plain-clothes man went along to see that they gathered up their effects, bought a railroad ticket, and were aboard their trains."

The past week marked the culmination of the "clean up" that has rid Cleveland of so many undesirables. Police Inspector Rowe last night declared himself well satisfied with Cleveland's present moral tone, adding that the city is cleaner than it has been in years.

Just how much longer the plain-clothes vice squad will be kept at work Inspector Rowe said he did not know. It may be only another week, it may be all winter, he said. He said, however, that the work has been accomplished much more thoroughly than it ever has been before.

There are about fifty of these so-called grill rooms, Lieut. Martinec said, that are little more than saloons with a back room furnished with drinking tables where women who have been the object of the special "clean-up" have *plied their trade*. As the result of police activity, patronage at these places has fallen to next to nothing, investigation has shown.

Conditions in this section were at their worst when the Baptist vice commission made its report a year ago. At the time, the report said an investigation by women detectives of 1200 working-girls, receiving small wages, disclosed that "out of the total number of cases gone into it was found that about 200 girls were living in rented rooms in the downtown section, and soliciting in downtown grill rooms, on the streets, and *in the dance halls.*"

One case, worse than the others, was that of a girl 14 years of age, brought in with a man much her senior. The girl was turned over to juvenile court. The man was sent to the workhouse.

The above long editorial, of which I have taken only a few fragments, was written or dictated with the idea that it was encouraging news. Well, in some respects it *is* encouraging. I am glad, and, in fact, I rejoice to know that the officers of the law have done *something;* but, oh dear me! what an *admission* it is in regard to the iniquity going on in great cities! The italics in the above are my own. Notice first there were 500 "undesirables" all together; and then look at that comment—"*mostly women.*"

The whole State of Ohio has just been discussing how much better morals we should have if women were allowed to vote; and the whole wide world, or at least a part of it, is in the habit of looking up to the women as the saints or as "guardian angels" compared with the rest of mankind; and this is right and proper and true. That expression, "grill room," has always jarred on my sensibilities; and may be I am stupid, or behind the times, when I confess that I had until now only a dim idea of what a grill room is. The above extract gives the definition. It is a saloon open at night, and especially nights and Sundays as well, with a back room where lewd women "ply their trade." The city acknowledges there were about *fifty* such places in Cleveland.

By the way, let us pause a little right here. When that Baptist commission a year ago demanded that the saloons should close nights and Sundays according to law, the chief of police of the city replied sneeringly that "there would not be prisons enough in the whole city to hold the culprits." That was given as a reason for not enforcing the law. By the way, Mr. Rockefeller donated a very large sum of money to eradicate the hook-worm in the South. This was a praiseworthy object; but what is *hook-worm* compared with the grill rooms of our cities—rooms where they entice (and perhaps purchase for money) girls fourteen years of age or less? And this is going on right here in this land of the free and the home of the brave—right in our own fair State of Ohio—the State that we have proudly boasted was centrally, geographically, and in other ways, in the front rank in regard to morals. May God help us. We can fight smallpox, yellow fever, diphtheria, and all such things, without let or hindrance; but when it comes to petitioning our

government, not only to give time and money, but to stop and even *consider* the death and ruin that come from the saloons or the beer traffic, Uncle Sam puts his hands in his pockets and stands mum. Taft, Roosevelt, Wilson, none of them dare make mention nor even *whisper* in regard to the rum traffic. The cigarette business is following in close wake, because there is *money* in it—yes, paltry dirty nickels—mainly nickels—in the business of selling cigarettes to children or giving them to children, to create an appetite. Our great Uncle Sam stands with his arms folded or looks the other way. Of course there *is some* legislation against cigarettes.

This same *Plain Dealer* has made mention many times of the three-cent dance halls, and has spoken encouragingly of having more such dance halls established, even under the auspices of the city itself; but the clipping says that heretofore, if not just now, these lost girls were using the dance halls as a place for "soliciting." Have they never read that closing verse of the seventh chapter of Proverbs, "Her house is the way to hell, going down to the chambers of death"?

You will notice in the above the expression "golden ruled" is used several times. Do you know what "golden ruling" means? I will tell you. It means letting criminals go scot free after they give some sort of feeble promise to "be good." Some time ago the Anti-saloon League, after the expenditure of considerable time and money, caught three men red-handed selling liquor in dry territory. They were both proved guilty, fined, and sentenced to imprisonment. While they were in prison a golden-rule officer reviewed the case and turned them loose to go back to their regular business. The only excuse he gave was that the punishment was "excessive." I suppose golden ruling means as a rule to say to a criminal, after he is caught, something like this:

"My friend, the golden rule admonishes us to do unto others as we would have others do unto us. Therefore I set you free."

What sort of philosophy is that? And it is, without question, the sort of philosophy that accounts for the terrible *increase* in crime and wickedness throughout our land. I said in starting out that we might rejoice that *something* had been done; but Superintendent Rutledge, of the Anti-saloon League in Cleveland, tells us the above reports are very much exaggerated, although he rejoices, as I said, that something has been done. He further reports to the Cleveland *Press* the fact that members of the Chamber of Commerce own property in the tenderloin districts is one great reason why this hellish traffic has been allowed to go on unrebuked and unpunished.

Let us now consider another phase of this "clean-up." These vile people, men and women, have only been sent "out of town." They have not been punished by fine or imprisonment. They are simply admonished to go somewhere *else* to ply their trade. To make sure they really *did* go somewhere else, these brave policemen saw them on the train and witnessed that they bought railroad tickets. Now, seriously, how much better off is humanity in general, take it the world over, when criminals are made to *go* somewhere else? When so many of our Southern States went dry the liquor-dealers all piled into Jacksonville, Florida; and if you will read a Jacksonville paper (advertisements especially) you will know something about the results. Our Prohibition friends have objected to our local-option work because we many times, at least, have succeeded only in making the rumseller move over into another county. Several times it has transpired that he was simply obliged to rent a room on the other side of the street, and go on as before. The above *is* certainly a bad feature of local option. But the Anti-saloon League usually gets right over into the neighboring county, so to speak, if it happens to be wet, and proceeds to make that county dry also. Now, if this crusade against vice, which I believe was originated by the Baptist Brotherhood, proposes to wage war, not only in Cleveland but in every other large city, that is all right. May God help us in our efforts to wind up the saloon and the grill room, and put a stop to that awful traffic whose "house is the way to hell, going down to the chambers of death."

THE PRESIDENTIAL BEE.

When the presidential bee
Goes a wand'rin' far and free,
A-seekin' various persons for their gore,
He's the bug of all to fear,
For if once he gets yer ear
You never ain't no good for nothing more.
We've the skeeter boiled in oil,
And to swat each fly we toil;
Germs and microbes—sure,
We've got them on the run;
But the presidential pest
Sits a-hatchin' on its nest—
What an awful brood we'll have
When he gets done!
Each 'lection year he'd hum,
And we though 'twas goin' some;
But now he never stops a-raisin' Cain;
We'll just force him to vamoose
(For 'e ain't no sort of use),
Then we'll settle down to bein' safe and sane.

—C. B. W.

High-pressure Gardening

"THE ELLIS POTATO SYSTEM;" SEE SPECIAL NOTICES, OCT. 1.

For the $3.00 I sent, I received some instructions about growing potatoes. The instructions, however, although they cost more than the $2.00 potato-book and our own combined, I do not think can be worth any thing near what those two up-to-date books ought to be worth to any potato-grower. As it is getting to be quite the *fashion* to have some "system" for sale, I want to go into this a little more minutely.

You will notice that this system promises to tell you how to grow big crops of potatoes—600 bushels per acre, for instance. Well, I will tell you what I got by way of instruction for raising this big crop. First, it is copied from the book "Garden Yard," by Bolton Hall. In fact, Ellis acknowledges that he copied it. It was poorly copied with a mimeograph, or some machine for taking many copies from a sheet written on a typewriter. A part of it was so badly copied that it was almost illegible. As I have the original book in question I read Ellis' instructions from that instead of his copy of it. Now, Bolton Hall copies his instructions from a little book sent out in 1905 by Finney Sprague, of Chicago. It was Mr. C. E. Ford who raised the great crop of potatoes, and after spending considerable time in trying to understand *how* he did it, I am satisfied that Bolton Hall has made of this thing a blunder. Ellis *copies* this blunder, and it looks to me as if he did not know enough about growing potatoes *himself* to *recognize* his blunder. He sent me over a hundred questions to answer. Then he sent me his replies to the answers I gave. The supposition or claim is that he answers each customer according to *his* special needs. It does not seem to me that this is true, however, for many of the answers, or nearly all of them, are copied from something written on the typewriter. Like the patent-medicine quacks, instead of answering each applicant's questions *individually* he has a lot of printed sheets sent out, printed on some copying machine.

I am sorry to find so much fault, for friend Ellis' instructions are mostly good and valuable. But every thing he mentions is already found in the nicely printed books on potato culture which I have already mentioned. I explained to him that I spend my winters in Florida, and he tried to give me instructions that are applicable to my Florida home; but you can imagine about what instructions one would give who had never been in Florida, or at least who had never grown potatoes there. As an illustration: He gives instructions how to handle *bugs* in Florida, when neither a Colorado bug nor a flea-beetle (those two great pests here in the North) has ever been seen in Florida —at least in Southern Florida, where I am located.

Once more, let me say in closing, look out for the man who has a system or secret in regard to agriculture, to be sent for a certain sum of money. If he has a good up-to-date book to sell at a reasonable price, by all means give him encouragement, and increase your knowledge and information at the same time.

BLEACHING CELERY BY MEANS OF STIFF PAPER INSTEAD OF EARTH; RAISING POTATOES FROM PEELINGS.

I am quite sure that your readers of the North would be benefited by a detailed article regarding the use of paper for bleaching celery—the kind and quality of the paper; proper time to put it on, if it could be described; how it is wrapped and tied; whether it is expensive; whether it can be used to advantage in the North, etc.

Throughout the North, hilling is resorted to in order to bleach celery. This is quite laborious, both to pile the hill and then to level it. In my section we plant the young plants 6 inches apart in the rows, ten in a row, with rows about 8 inches apart. This will cover a space from the first plant in the row to the tenth one of nearly 5 feet; and 1000 plant-hills will make 100 rows 66 feet. It must all be hilled by hand—quite a bit of work when very little results.

When it is considered that the pile of dirt is little or no protection from freezing, and that we must also use a litter covering, I believe that paper might be profitably used, and with the litter would be a better protection than dirt.

Regarding your statement that whole large potatoes are the best seed I quite agree; but when seed is selling in excess of two dollars a bushel the poor man must resort to subterfuge. During the past winter and spring I had the good wife save the peels of those she cooked, cutting a little deeper at the eye. During January and February these peels were planted in the hot frames, and after March in the open ground; and while we may have secured a larger yield had we used large whole potatoes, yet the experiment was quite successful.

Lake Roland, Md., Sept. 29. BENJ. B. JONES.

Friend J., if I am correct, pretty much all the celery produced in Florida is now bleached with a heavy kind of paper that comes in rolls made expressly for that business. I do not know how far it has been used here in the North; but in the South it seems to have taken the place of earthing up entirely. The paper is held in place by means of laths or similar stakes. They are pushed into the ground and held together at the top by means of wire looped around a stake on one side to the stake on the opposite or other side of the row. If it is carefully handled, it may be taken off and laid away and used season after season.

In regard to growing potatoes from

potato peelings, I remember seeing some that were thrown out to the chickens, and which were covered up with dirt where the hens were scratching. Some good strong sprouts started up, and I transplanted them into the garden and had some fine potatoes. Where very large potatoes are put on the market, and the potato seed is expensive, your suggestion of taking a very thick slice of paring, and planting the buds or sprouts, would no doubt effect quite a saving in expensive seed.

Poultry Department

"NOTHING NEW UNDER THE SUN;" CONVERGENT POULTRY-YARDS, MUSTARD, CHICKENS, ETC.

I thought when friend Stoddard gave us the convergent poultry-yard it was absolutely a new thing, or at least I had never heard of any thing of the sort; therefore I was considerably surprised to find something of the kind already in operation for the dairy business. And now comes the following from away off over the sea from the Isle of Man:

I notice in GLEANINGS, Aug. 15, your remarks about the convergent poultry-runs. According to Lewis Wright, in the poultry-book of 1902, a Mr. Dunbar, of Bedford, Mass., had a plant of your description built and planned by C. H. Payne, C.E., and stated that it had been described and illustrated in the *Reliable Poultry Journal.*

About mustard for poultry, I use a teaspoonful for six birds. I inclose a cutting giving details of an experiment with mustard, and also the reason for its action.

Your special numbers have been first class; but what about goats? I have two nannies—Angelo-Togs, and each goat gives three quarts of very rich milk just after kidding, and keeps in profit from 7 to 8 months. This saves buying milk; and a penny saved is a penny earned.

W. A. TEARE.

Ballashellan, Ballabeg, Isle of Man, Sept. 9.

From the above it seems the idea was in print in 1902, with the suggestion that the same thing has been described and illustrated from our good friends of the old *Reliable Poultry Journal.* Did you ever? But that is not all. It seems also that the recent story about mustard for poultry is only a revival of something published some time ago away off across the waters, and that over in England there is and has been for some time a preparation on the market called "Colman's poultry mustard." Our good friend who writes the above letter submits several pages of what I take to be an advertising sheet for mustard, put out in August of the present year. Full particulars are given in regard to some very careful experiments, and you know our English cousins are always a *careful* people. The outcome of all this, so at least the advertising circular states, is that mustard not only very largely increases the number of eggs laid, but it also enhances the fertility and the strength and vitality of the chickens after they are hatched. Now can not somebody in the United States advertise and furnish "poultry mustard" at a considerably less price than the ground mustard of commerce? Our good friend Teare also sends us a leaflet from the "Mark Lane Express Almanac" for 1910, and this leaflet speaks of the advantages of liming the soil when growing clovers, etc.

CAN A MAN KEEP CHICKENS ON ¼ CENT PER DAY PER HEAD?

It seems that the statement by Mr. Frederick Martin, p. 772, Dec. 15, 1911, would be more helpful if he would be more explicit as to what he fed those 300 fowls, and prices of food at that time. "Every thing purchased that was fed," and fed them at a rate of 76 cents per head per year! Of course we see it to be less than ¼ of a cent a day per fowl. Will some one kindly have Mr. Martin tell us how he did it, or give me some means of finding out how it was done? How many bees and chickens can be profitably kept on one acre of land surrounded by orange-groves and alfalfa, using half of the acre for alfalfa, the other half for yards? I do not care to keep more than 40 stands of bees; but I should like 300, or as many as I could handle, of laying hens on one acre, which is good land, provided with plenty of running water.

Redland, Cal, March 1. ARTHUR HEAD.

My good friend, you are right in thinking that 76 cts. per head per year is very low; but a good deal depends on the kind of chickens and the price of grain. If you have an acre of ground well stocked with alfalfa, the alfalfa itself will go a great way toward keeping chickens. But generally speaking, I think 300 chickens on an acre is rather heavy stocking. Where alfalfa succeeds, there is probably nothing better than chickens, for it furnishes them both green food and a ration that is almost equal to grain besides. If Frederick Martin sees this he can, perhaps, give us more definite information in regard to the matter.

MUSTARD FOR CHICKENS, ETC.

It is not very often that we find in the Sunday-school lesson suggestions for feeding poultry; but in the "Pilgrim Lesson Leaves," in discussing the lesson for July 21, we find the following:

Dr. William Hanna in *The Designer* has an interesting travel note on this verse [Mark 4:31]. He says:

"Nowhere in the world does the mustard plant attain such size as it does along the shores of the Sea of Galilee, on account of its very rich soil and its abundance of sulphur. One particular clump of mustard plants was as high as our heads as we rode through it on horseback, and it was full of hundreds of twittering and singing goldfinches

which feed upon the seeds. Now, there is nothing irritating in the seed itself, because the activity of powdered mustard is brought out only by the addition of water, and therefore these little birds could feed upon the seeds with impunity. This explains the parable which was uttered on this very shore of the Sea of Galilee."

As you will notice, it is a comment on the 31st verse of the 4th chapter of Mark. Note also the statement that the mustard grows to a mammoth size on account of an "abundance of sulphur." Now, there is so much sulphur in the artesian well water in Florida that it is offensive to most people. Well, I have before remarked in regard to the wonderful growth of various kinds of mustard in Florida. In fact, all the *Brassica* family seem to flourish without any fertilization. No doubt the wild birds feed on the mustard with impunity; and here is a hint explaining the fondness of domestic fowls for mustard in any shape whatever; and I am sure this same mustard is not only conducive to their growth, but it is also conducive to a large yield of eggs. Feed your chickens green mustard, all they will eat; and when you can not get green mustard, give them mustard in their mash, and they will reward you with an abundance of eggs; and not only that, but eggs that are strongly fertile.

A PERAMBULATING POULTRY ESTABLISHMENT.

Our friend Philo has made quite a sensation, not only throughout the poultry world, but throughout the general world, in developing and *demonstrating* the feasibility of growing our own eggs in the back yard. Well, the letter following goes a step further, and suggests that when you want to take a pleasure excursion through the country, or when you wish to migrate from one State to another, you can just load your chickens into the wagon with your household effects, and have fresh eggs right along on your trip, wthout any profit going to the middleman. Read the following interesting letter and see if I am not right about it:

I brought 20 White Wyandotte hens with me from my old home in Pueblo Co., Colorado. We came by wagon through the Pan Handle of Texas, and were on the way from May 6 to July 2. They were in perfect health all the way, and made a good egg record (we kept strict account), and are still doing all that hens can do. Since we stopped traveling they have wanted to sit, and have hatched 41 chickens, 40 of which are living, and are sturdy and fine-looking. We can raise chickens each month in the year here. Our soil is rich in lime, potash, and magnesia, but it lacks humus and nitrogen. We are thinking of trying sweet clover. People here have never seen it, and do not know what it is. This is a peculiar mountain-plateau or high valley—3000 feet. It seems strange and dreary to us; but we must live here for a while. The climatic conditions and the water from the big government spring are all that was claimed for them. Our minister said last Sunday, "Your country is like the Holy Land in many respects." Our grain crop here is maize. One little seed will bring several short stalks, each producing a head composed of many grains—often a "hundred fold."

Fort Stockton, Texas. MARY M. MCKALLIP.

My good friend, I not only rejoice that your biddies kept on laying on that long trip of 57 days, but to know that you are attending *church* in your new home, and that you have found an abiding-place like unto the Promised Land. I should like to know more about that kind of maize that yields, *many times*, a "hundred fold."

THE "POTTER SYSTEM," ETC.

I laughed right out aloud when I read of your opinion of the way Potter does business. I want to say a few words in regard to that system. The system is all right in a good many cases, and no doubt Potter ought to have some credit for having his little dollar book printed; but I don't believe he ought to have the credit for originating the "system" or discovering it. I also bought his book some five or six years ago for $1.00; and when I received it I read it; and, after finishing it, I sat down and laughed, not because there was anything comical in that booklet, but simply because I was foolish enough to pay $1.00 for something I had known for years, or long before I had ever seen a poultry paper or a system advertisement, and I have read poultry papers now off and on for some 16 or 17 years. I am 34. When I was seven or eight years old my mother would have us children go into the coop with her and catch the hens for her; she would test them in the Potter-system fashion, and would tell us which hens would lay and which would not. Then we would pen up the layers and let the others run at large. Especially would she do this mostly in the spring, when the chickens would commence to steal nests under buildings and woods.

I have invested in two such systems, and have heard or known of those same things before, so I have quit that part of the purchasing end of the poultry business, and find I am money ahead by using a little common sense with good wholesome food and less "system," so called.

JULIUS F. RIPCZINSKI.

Minneapolis, Minn., March 12.

CHICKENS—FREEING THEM FROM VERMIN BY GIVING SULPHUR IN THEIR FEED.

Some time ago I expressed some doubt about sulphur having any effect on vermin when fed to chickens. In reply the following comes to us from away off in South Africa:

Mr. A. I. Root once wondered if sulphur in the food of chickens could clear them of vermin. Let him take (eat) daily for a few days a dose of sulphur in any form, and soon he will find his silver money, silver watch, or pencil-case, etc., blackened by the sulphur-gas compound emanating from his sweat.

Potchefstromm, S. Africa, Sept. 15. J. E. DYER.

INDIAN RUNNER AND PEKIN DUCKS.

I have eleven of the Indian Runner ducklings three weeks old. I hope they will lay in winter; but our winter here is so much colder than yours, possibly they will not do so well.

I have two yearling Pekin ducks which have laid to date 222 eggs. The first egg was laid February 23, which I think compares very favorably with the Runners. Last year they averaged 89 eggs each, and I have read in duck literature they are not profitable the second year.

Knowlton, Que., June 27. S. M. BULLARD.

Temperance

IMBECILES, DEGENERATES, ETC.; SHALL OUR GOVERNMENT CONTINUE TO FOSTER AND ENCOURAGE THIS SORT OF "CROP"?

I have before spoken of the American Medical Society; and I have been assured that it is the best authority in the land in regard to the safeguarding of our people. I have also referred occasionally to Miss Minnie J. Ellet as a woman who has been for some years indefatigable in this matter of rousing our people to the importance of getting legislation for the protection of our boys and girls. Below is something which she furnishes:

STATISTICAL WARNINGS AND ALCOHOLIC DEGENERACY.

Dr. F. A. MacNicholl, vice-president of the American Medical Society, delivered an address before that society at Atlantic City in June, on alcohol and degeneracy. He declared: "Mainly because of the appalling increase in the use of narcotics and alcohol a wave of degeneracy is sweeping the land—a degeneracy so appalling that it staggers the mind and threatens to destroy the republic." * * * He tells how modern scientific methods have reduced the mortality from acute diseases; how the sources and carriers have been discovered and destroyed; but he laments the marked contrast with which the nation deals with alcohol, "that most potent source and carrier of chronic diseases of heart, liver, lungs, and other organs."

He further says:

"A study of the United States census shows that, within a period of fifty-three years, the population of the United States has increased 330 per cent, while the number of insane and feeble-minded has increased 955 per cent."

He says: "Statistics compiled by leading insurance companies of Great Britain show that, in every 1000 deaths, 440 are due to alcohol. This same rate in the United States would mean a mortality from alcohol of 680,000 a year.

"But the great burden of drink is not borne by the drinker, but by the drinker's children. The germ cell that is to be evolved into another being is the most highly organized of all the cells in the body. In its protoplasm lies the material and pattern of the perfected organism. Should such poison as alcohol lessen the nutrition of the cell or impair the quality of the protoplasmic material and deface the pattern, these shortcomings and defects will be manifested in the subsequent stages of development."

He tells of a hospital in New York for the treatment of physical defects, in which every patient was the child of drinking parents. He says further:

"One-third of New York city's schoolchildren are mentally deficient. If this percentage holds good over the entire country, there are *seven million* children of school age who are mentally deficient, and fewer than 67,000 of these are free from hereditary alcoholic taint. A nation half diseased and half well can not live; but here we have three-fifths of the rising generation mentally and physically diseased."

"Not long ago a call was issued for young physicians to enter the United States army. Eighty per cent of those examined were rejected as physically unfit. When four-fifths of our most representative men are pronounced unfit for war, what shall we say as to their fitness to father the next generation?"

"Boards of health, armed with police power of state, eradicate the carriers of typhoid, and quarantine the victims; but alcohol, a thousand times more destructive to public health, continues to destroy. Alcoholic degeneracy is the most important sanitary question before the country; and yet health authorities do not take action, because alcohol is entrenched in politics. Leaders in politics do not act, because their political destiny lies in the hands of the agents of the liquor traffic. We are face to face with the greatest crisis in our country's history. The alcohol question must be settled within the next ten years or some more virile race will write the epitaph of this republic."

East Akron, Ohio. MINNIE J. ELLET.

THE LEGALITY OF THE TREATING LAW.

It transpires that my department has a good friend located in the very heart and head of our nation, and here is what he says:

Mr. A. I. Root:—As a reader of GLEANINGS I have noticed with much interest your vigorous wielding of the cudgel on the live moral questions, including that of temperance, and as of possible interest to you I enclose a page which I have torn from a weekly publication of court decisions, containing a discussion of a case that was decided by the Supreme Court of the State of Washington holding a "no-treating" law to be constitutional, and valid. CHAS. J. WILLIAMSON.

Attorney at Law, Patent Solicitor and Counsel.

Washington, D. C., Aug. 20.

From the clipping he sends, I extract the following:

It is argued that treating is an act of hospitality which has always been exercised by a free people, and is a right of the purchaser of liquor not to be prohibited. The court answers this contention: "In our opinion it is of no weight whatever in support of a practice which becomes recognized as a source of evil and a menace to public morality and good order. Just as the right to engage in the liquor traffic is not an inherent right in any citizen, neither is it an inherent right in any citizen to treat another in a licensed saloon which is under the control of the police power being exercised by a municipality, as in this case. Whatever the right of the citizen may be elsewhere, he has no inherent right even to buy liquor at such a place." The ordinance is upheld.

"RAISING THE REVENUE" BY SELLING GERMS OF "TYPHOID FEVER," ETC.

The writer in the *Rural New-Yorker* says he "has no more use for intoxicating liquor than for typhoid germs." What would he think if some one should ask him to vote for men or parties that propose to legalize the sale of typhoid germs and raise revenue from it? What would *you* think of such a proposition? Yet such a policy could scarcely do more harm than the legalized and protected sale of alcoholic poison. Now, there is only one party that always and everywhere proposes to put a stop to this "sum of all villainy," so what is the duty of all temperance people? If members of the Prohibition party act in an "uncharitable and unchristian manner," it is unfortunate; but if the above facts are true, does that fact absolve you or any one else from helping the Prohibition party to ultimate victory? Would it not be more practical for the Anti-saloon League to help the party, and thereby "pour coals of fire" on its head?

I notice you speak of pokeweed. We have eaten the young shoots in spring when about six inches high, including the tender stalk, cooked as other greens.

Savannah, Ga., Sept. 21. CHAS. E. A. HALE.

THE EFFECT OF PROHIBITION IN OKLAHOMA.

See the following, which we clip from the *American Issue:*

The New State Brewery in Oklahoma City is owned by the Anheuser-Busch Brewing Company, of St. Louis. Constitutional prohibition closed this brewery, and a few days after statehood 27,000 gallons of beer was run into the sewers from the vats in this brewery.

May God be praised for what Oklahoma has done and is doing.